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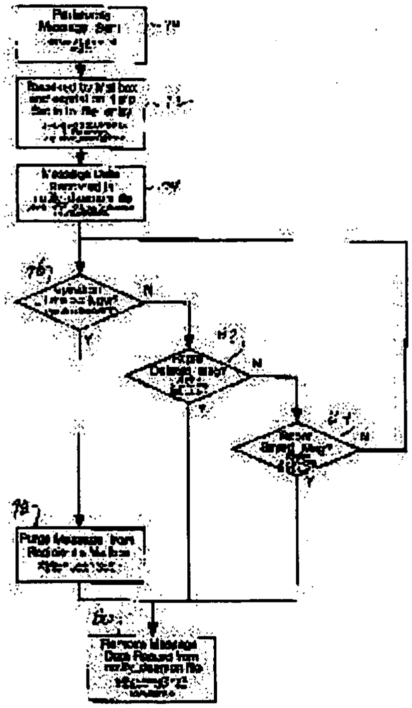
(54) SYSTEM RAVING DELIVERY OPTION FOR DELETING/REPLACING MESSAGE

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a user interface with which a message to a recipient can be remained.
SOLUTION: In the message deletion process of a system, the validity of a message stored in the system is investigated, and the message over the validity without being read by the recipient is deleted or purged. The notice of urgency in the limit of messages more than one is prepared for a caution to a subscriber related to deletion. This process issues the caution of message deletion to the transmitter or returns the message to the transmitter. Similarly, this system can provide a unique identifier for replaceable message. The identifier can be made into code generated by the system or inputted by the transmitter or unique pattern such as the voiceprint of the transmitter.



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CLAIMS

[Claim(s)]
[Claim 1] Message processing characterized by deleting said message if a setup of the term time amount of the addressing message to an addressee recorded by the transmitting person is enabled to said transmitting person and said term time amount passes.
[Claim 2] When said addressee peruses a message, the message is message processing indicated by claim 1 characterized by not being deleted.
[Claim 3] The system which is a system which accumulates a message and is characterized by having to a user the user interface which enables assignment of storing of the message addressed to an addressee, and the term time amount of said message.
[Claim 4] Furthermore, the system indicated by claim 2 characterized by having a purge means to purge said message if said term time amount passes.
[Claim 5] The computer-readable record medium characterized by having the processing which will delete said message if a setup of the term time amount of the addressing message to an addressee recorded by the transmitting person is enabled to said transmitting person and said term time amount passes.
[Claim 6] It is the computer-readable record medium which the message which has the term time amount of the addressing message to an addressee stored by the transmitting person is recorded, and is characterized by using said term time amount for deletion of said message if it passes over it.
[Claim 7] Message processing which will be characterized by transposing said replaceable message to deletion or a permutation message if the replaceable message which has a unique permutation identifier is stored and said replaceable message is specified by said identifier.
[Claim 8] The message system characterized by having the computer system which transposes said replaceable message to deletion or a permutation message if the replaceable message which has a unique permutation identifier is stored and said replaceable message is specified by said identifier.
[Claim 9] Message processing which will be characterized by deleting the message in which said deletion is possible if the message which has a unique permutation identifier, and which can be deleted is stored and the message in which said deletion is possible is specified by said identifier.
[Claim 10] The message are recording system characterized by having the computer system which deletes the message in which said deletion is possible if the message which has a unique permutation identifier, and which can be deleted is stored and the message in which said deletion is possible is specified by said identifier.
[Claim 11] The message are recording system characterized by having the user interface which tells the message stored in the addressee and sets term time amount as the message which is not perused [which was stored].
[Claim 11] The message are recording system indicated by claim 11 which generates said notice before the predetermined time from which said message is deleted.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] It is not effective and this invention already relates to the system which can specify the message of the specific point transposed to deletion or the present message, or the individual who leaves a message especially can specify the time of day/date which deletes a message about the system which gives a user a message system like a voicemail system for becoming an invalid and specifying deletion or the message replaced.
[0002]
[Description of the Prior Art] A transmitting person (an individual or machine) can leave the message addressed to others or an addressee with a voicemail system, an electronic mail system, and the present message system like others. A transmitting person can inscribe a message "urgently" or can specify a delivery option which requires an arrival-of-the-mail response. Some systems include the description of the system level marked so that all messages may be deleted in a specific period like 30 days. However, a transmitting person cannot specify when a message should be deleted. This brings about the activity which does not have the need in an addressee side, when already hearing the message which is not effective. For example, when an addressee does not hear the message until after the message was left behind for the meeting related to an addressee and the meeting started, an addressee's time amount becomes useless. Isn't the message delivery option with which a transmitting person can specify the expiration date of a message required?
[0003] Some subscribers of a message system demand automatic distribution of a message like the weather or a stock price. If the message in which the subscriber was stored is not heard until many such automatic distribution messages are stored, the subscriber will make time amount useless by hearing the overdue message. Isn't the capacity which transposes a former message to a more current message automatically required?
[0004]
[Abstract] The transmitting person of a message can leave the message addressed to an addressee, and the purpose of this invention has the message in enabling that designation which should be deleted when.
[0005] In addition, this invention aims at deleting only those messages, when it is not reproduced or perused by the addressee, even if the message which has the expiration date specified by the transmitting person becomes the term.
[0006] Moreover, the purpose of this invention offers the capacity to recognize the source of supply of a message, and the source of supply is in making it possible to delete or replace the message stored before.
[0007] Furthermore, this invention aims at reducing are recording without the need for an invalid message.
[0008] Moreover, this invention aims at reducing the number of the meaningless messages stored in the message system.
[0009] In addition, this invention aims at giving a user control exceeding a message delivery option.
[0010] Moreover, this invention aims at giving the optional notice of the message deleted without being perused by the addressee at a transmitting person including an expiration date.
[0011] Similarly, when an unread message is deleted, the purpose of this invention is returning the deleted message to a transmitting person, and is to enable the contents check of the unread message by the transmitting person.

[0012] Moreover, this invention aims at collecting the storage assigned to the message over which the term passed.
[0013] the above-mentioned purpose is attained as a part of specification of the distribution option of a message by the system by which a user can specify the expiration date and/or time of day of a "PARISHABURU (perishable: [ ] -- perishable -- it is easy to disappear)" message. The process which deletes the message of this system checks the term of a message, and deletes the message over which it was not perused by the addressee but the term passed. A deletion process carries out optional warning of the message having been deleted by the transmitting person, and/or returns a message to a transmitting person. This system can provide a transmitting person with the identifier of a message, when a message is recorded, and behind, this identifier is used for finding the unread message stored before, in order to replace or delete them. An identifier is a unique code like a voice print (voice print), or a unique pattern.
[0014] Both other purposes and advantages will become clear [from the configuration and actuation which were indicated by the claim] to the operation gestalt mentioned later and a list. Refer to the same part for the same sign in reference of the accompanying drawing which forms a part of this application.
[0015]
[Embodiment of the Invention] This invention enables an expiration date/time of day to inscribe on a message like a voice mail service message by the transmitting person of a message. If it passes over an expiration date/time of day, the system which stores a message will delete or purge the message which is not read by the expected addressee (purge).
[0016] This invention is indicated by U.S. Pat. No. 5,029,199, and is preferably performed with the voicemail system 8 as shown in drawing 1 referred to below. Such a system (R), for example, CO ACCESS, and an Access NP (R) system can come to hand from Boston Technology and Inc. The system 8 as shown in drawing 1 inscribes the holding time which generally defines residual time until a message is purged on each message. A system 8 includes the process which deletes the message (or message file) on which deletion or a purge which reached the maximum retention time was inscribed. Such a process often carried out in the curious (whimsically) way of calling called a "GURIMU reaper (grim reaper)" program is performed every day at the period which is not in general busy. Such a program is liked and used for this invention in order to delete or purge the message which reached at the term time of day. Such a program is correctable so that a typical deletion process can also be performed every day or it may perform more frequently.
[0017] The user interface for demanding selection of a distribution option from a transmitting person in a system like a voicemail system, in order to provide a transmitting person with the capacity which specifies an expiration date needs to be corrected in order to add the prompt procedure for distribution of a PARISHA bull message. A typical transmitting procedure is shown in drawing 2. The distribution option 13 which is a part of procedure is corrected as shown in drawing 3. In the voice prompt 22 which says "push 5 in order to set up an expiration date (discharge)", the prompt script 20 for urging a distribution option with voice is corrected so that it may contain as a menu item. It is corrected so that the flow pass of processing may also include the "5" selection 24 and the PARISHABURU distribution prompt procedure 26. The detail of this procedure 26 is shown in drawing 4.
[0018] The message sent to a voicemail system as shown in drawing 1 from a subscriber is stored in a message file. The connection list of message records (or entry) is maintained in the subscriber database of a master control unit (MCU), or an exclusive database management (DBU) system / server including the identifier of each subscriber's message file. The message file itself is stored in the disk storage of a speech processing unit (VPU). Each message file has a header accompanying the voice data shown in drawing 5 and 6. Although both the DS of the message record entry 30 of a connection list and the file header 32 of a message file can be corrected so that the message term time amount fields (expiration_time) 34 and 36 may be included, it is not necessary to correct both an entry 30 and the header 32. The header of drawing 6 is fond and it is corrected uniquely. If correction is appropriate, retrieval of either a file header or a connection list will expose the message over which the term passed.
[0019] The procedure of the event performed according to the distribution option process of obtaining term time of day is shown in the flow chart of drawing 7. If the option of the record message 40 is chosen, a process will judge by 42 whether the "distribution option" was chosen. a process is like [if chosen / in the

future] a distribution day (future delivery date) -- "-- others -- it judges by 44 whether distribution option" was chosen, and a distribution option besides them is set up by 46. And if a process is judged and chosen [whether the "PARISHABURU distribution option" was chosen and] by 48, it will set up the term time amount of a message by 50 from the term time amount which the transmitting person inputted. And a message is transmitted or stored by 52.

[0020] The approach that a message is purged from a system and some differ is in an expiration date/time amount. The first approach sends the term time amount of the command and message which specify the message (any of the record of a connection list, or the message file itself are they?) which should be purged to a par RISHA bull message management process. Generally such a term time amount command cooperates with step 50 of drawing 7, and is sent. A PARISHA bull message is transmitted or stored by 70, and a PARISHA bull message management process as shown in drawing 8 begins to move, after term time amount is set as the record entry 30 and/or the message file header 32 by 72. The term command for message terms is recorded on a command queue based on the time amount specified by the term command by 74. This queue is stored in the suitable memory of a file or others. A notice process wakes up from the standby condition which is a normal state, and scans a queue to the event sake which should be started. If a scan finds a term command, it will be notified to an executive process. If a PARISHA bull message management process receives a notice, 76 compares term time amount and current time and term time amount has passed, a message will be purged from an addressee's mail box by 78 by deleting a message file from a connection list using a process like the GURIMU rip-saw process of having removed and mentioned the message record above.

[0021] In addition, if a queue is stored in the queue of a term command by time amount, it will only be that the thing which is the need sees the entry of the beginning of a queue in the notice process which judges whether a PARISHA bull message management process needs a notice.

[0022] After a message is purged, a term command is removed from a queue by 80. Since the removal from a queue is not notified, it stops an executive process from initiation of the purge check procedure shown in drawing 8. If it has not passed over term time amount, a process is 82, and it will check in order to know whether the message was already deleted or the command was removed from the queue by 80. If the message is not deleted, a process is checked in order to know whether the message was saved by 84. Preservation of a message shows that the message was received by the addressee. If the message is saved, a command will be removed from a queue by 80. If two commands have the same term time amount, a notice process will be notified to an executive process about each of these commands.

[0023] The purge actuation in step 78 can also be set up so that a transmitting person may be notified of using the transmitting person field of the record 30 of drawing 5, and a message being deleted, but when a message is perused, it is good for a general reply reception process to notify a transmitting person. This actuation can return that message to a transmitting person rather than it notifies that a message is deleted by the transmitting person.

[0024] The second approach of PARISHA bull message management uses the term time amount stored in the record 30 or the header 32 about each message. Periodically, a deletion program is activated, and in order to judge whether what passed over term time amount is stored, all the message records 30 and/or message file headers 32 are inspected. It will be purged if there is a message which passed over term time amount.

[0025] The third approach is accompanied by creation of the connection list with term time amount of messages. This requires that the record of a message or the header of a message should be corrected so that the further set of connection may be included. In this DS, as shown in drawing 9, in each mail box, each message contains the pointer to the next message in a list in those mail boxes including the pointer 90 to the connection list of messages 92, 94, and 96. A pointer 98 points to a message (92) with the earliest term time amount, and each message has a pointer to a message (94) with term time amount early next so that the list started by the Parrish (perish: wither and rot) list head pointer 98 may become term time order. Deletion or a purge process inspects the first entry of a list out of date periodically using a pointer 98. If the term of the first message on the list has passed, the message file will be deleted (if it reaches and the message is not saved), and a pointer 98 is made to direct the next (the second) message on the list (94). If the elapsed time of the first message has not passed, since there is no message which passed over the term, no actuation is required. This approach requires the new message to which the term which scans that list and is added to that list as the custom (conventionally) is set, in order to insert connection in the message of the suitable point of a list.

[0026] If a message is made to become old instead of deleting, they can be transposed to a new message. in order to recognize the message which specifies the message which will be replaced in the future, and should be replaced between the record processes mentioned above -- a transmitting person -- "-- others -- it makes it possible to change distribution option." If a user chooses this option by 100 as shown in drawing 10, a system answers or provides a transmitting person with the unique code for recognizing the message generated by 102 by 104, and stores that code in a record 30 by 106. Instead of thinking at any time, since a transmitting person can supply or input the unique code, selection of a code with easy remembering is attained. If a transmitting person works on again the mail box with which the message which can be replaced is stored later, as shown in drawing 11, a distribution option process will choose the option which replaces a message by 110, and will make it possible to specify the message which should be replaced by 112 in unique code. And a system searchs the message list of a mail box by 114 using a unique code, detects the message which has not already been permuted or saved by 116 and which should be replaced, and adds a new message to a message list. Of course, a message can also just be deleted together with a unique code instead of being replaced.

[0027] The further improvement in replacement of a message is accompanied by a transmitting person's voice print being obtained as the custom (conventionally) at the same time a permutation message is recorded. In order to find the voice which searchs the message of a mail box and is in agreement, a transmitting person's voice print is obtained and used later. When a match is found, it enables a transmitting person to transpose the message which could be reproduced and found the message to a permutation message.

[0028] A unique code or a unique identifier is usable in order to enable a transmitting person to identify the message stored before [it can essentially say, "it is OK"] deleting rather than it is replaced.

[0029] When both a transmitting person and an addressee are subscribers of this system, a transmitting person's mail box ID can be used as a unique identifier.

[0030] Although the process and data structure of this invention are usually stored on the hard disk medium of the system of drawing 1, a process is also storable in other media like a floppy disk, and ROM and PROM.

[0031] In order to create the system which is easy to use for the addressee of a message, if an addressee accesses a mail box, preferably, a system checks a PARISHA bull message, and an addressee will inform an addressee of having one or a PARISHA bull message beyond it, and will be the same approach, and you will be told about also about a priority message. Especially a system can also show the number of the messages over which a term will pass within the following 24 hours. An addressee can also be told about a system about the message which is not perused [the term expired to peruse]. Modification of the interface prompt sequence for telling the number and term time amount of a message is shown in drawing 12. Furthermore, in order to reproduce or skip a message, when a subscriber goes into a subscriber's mail box through a message list, as for a system, each message can show whether it is a PARISHA bull message. This is shown in the interface sequence of drawing 13.

[0032] When a message is reproduced to an addressee, a system can reproduce a PARISHA bull message with reproducing them in order of record, or a high priority.

[0033] This invention thought the message of a voicemail system as important and was described. However, this invention is applicable to a text, facsimile, an electronic mail, video, and the message system type [other] like others. Similarly, this invention thought that term time amount or an expiration date set up as important, and was described. An adjustable maintenance period can be set up by the user instead of them. Similarly, this system thought setting up adjustable time amount as important, and was described. This system can also make selectable to a user term time amount like the "end of the month" set up beforehand. Similarly, this invention thought detecting the message of past a term to term time amount as important, and was described. Instead, this detection actuation can also be performed at the specific spacing like every night.

[0034] Many the descriptions and advantages of this invention are clear from the operation gestalt explained in full detail, therefore the attached claim has the intention of covering all such descriptions included in the original intention of this invention, and the range, and advantages. Furthermore, since this contractor will find out much deformation and modification easily, all suitable deformation and resemblance against which this invention will not be restricted to the configuration and actuation which were illustrated and described, therefore it will appeal go into the range of this invention.

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DRAWINGS

[Drawing 1]

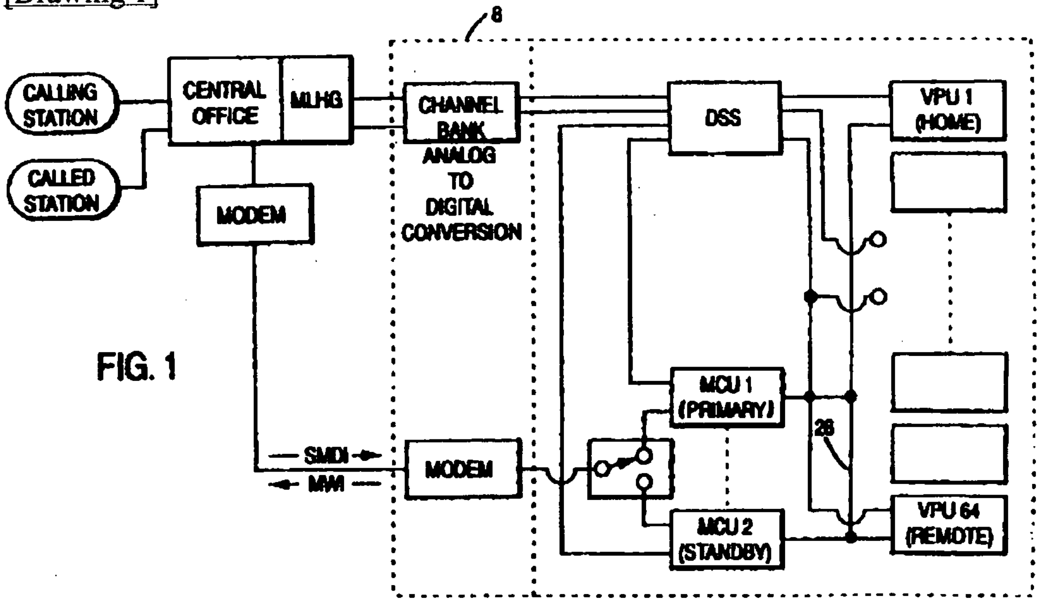

8
CALLING STATION
CALLED STATION
CENTRAL OFFICE
MLHG
MODEM
CHANNEL BANK
ANALOG TO DIGITAL CONVERSION
DSS
VPU 1 (HOME)
MCU 1 (PRIMARY)
28
SMDI
MWI
MODEM
MCU 2 (STANDBY)
VPU 64 (REMOTE)

FIG. 1

[Drawing 2]

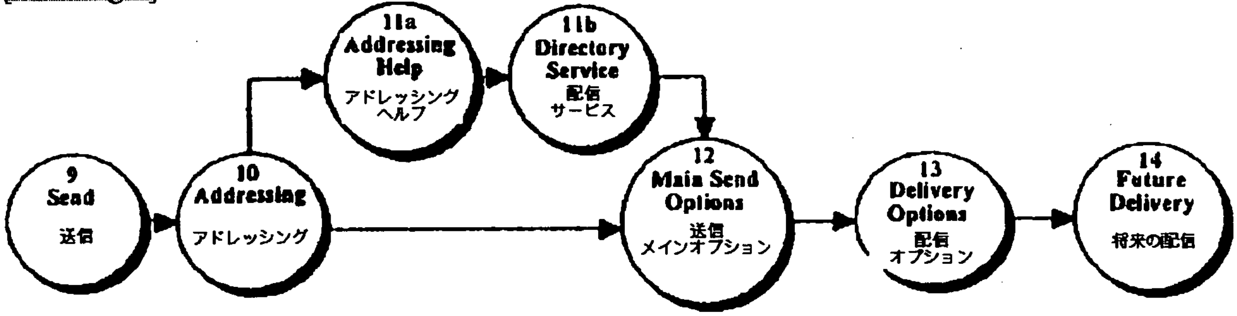

11a
Addressing Help
アドレッシング ヘルプ
11b
Directory Service
配信 サービス
9
Send
送信
10
Addressing
アドレッシング
12
Main Send Options
送信 メインオプション
13
Delivery Options
配信 オプション
14
Future Delivery
将来の配信

Fig 2

[Drawing 5]

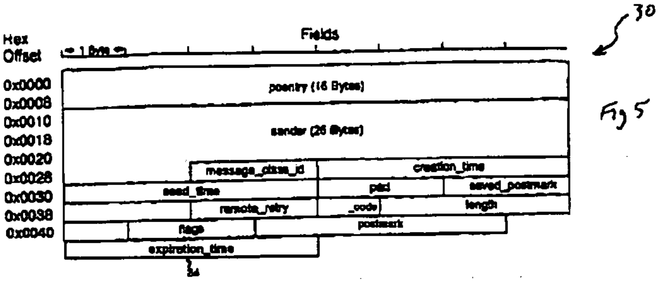

30
Hex
Offset
1 Byte
Fields
0x0000
0x0008
0x0010
0x0018
0x0020
0x0028
0x0030
0x0038
0x0040
poentry (16 Bytes)
sender (26 Bytes)
message_class_id
creation_time
send_time
pad
saved_postmark
remote_retry
_code
length
flags
postmark
expiration_time
34

Fig 5

[Drawing 6]

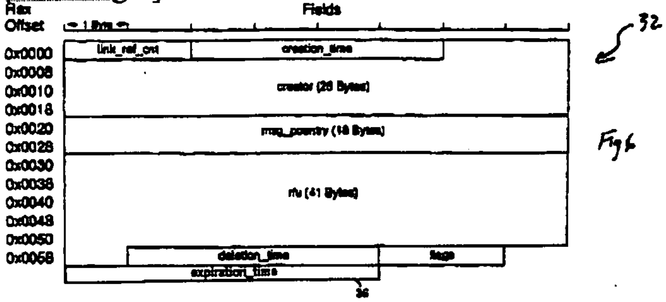
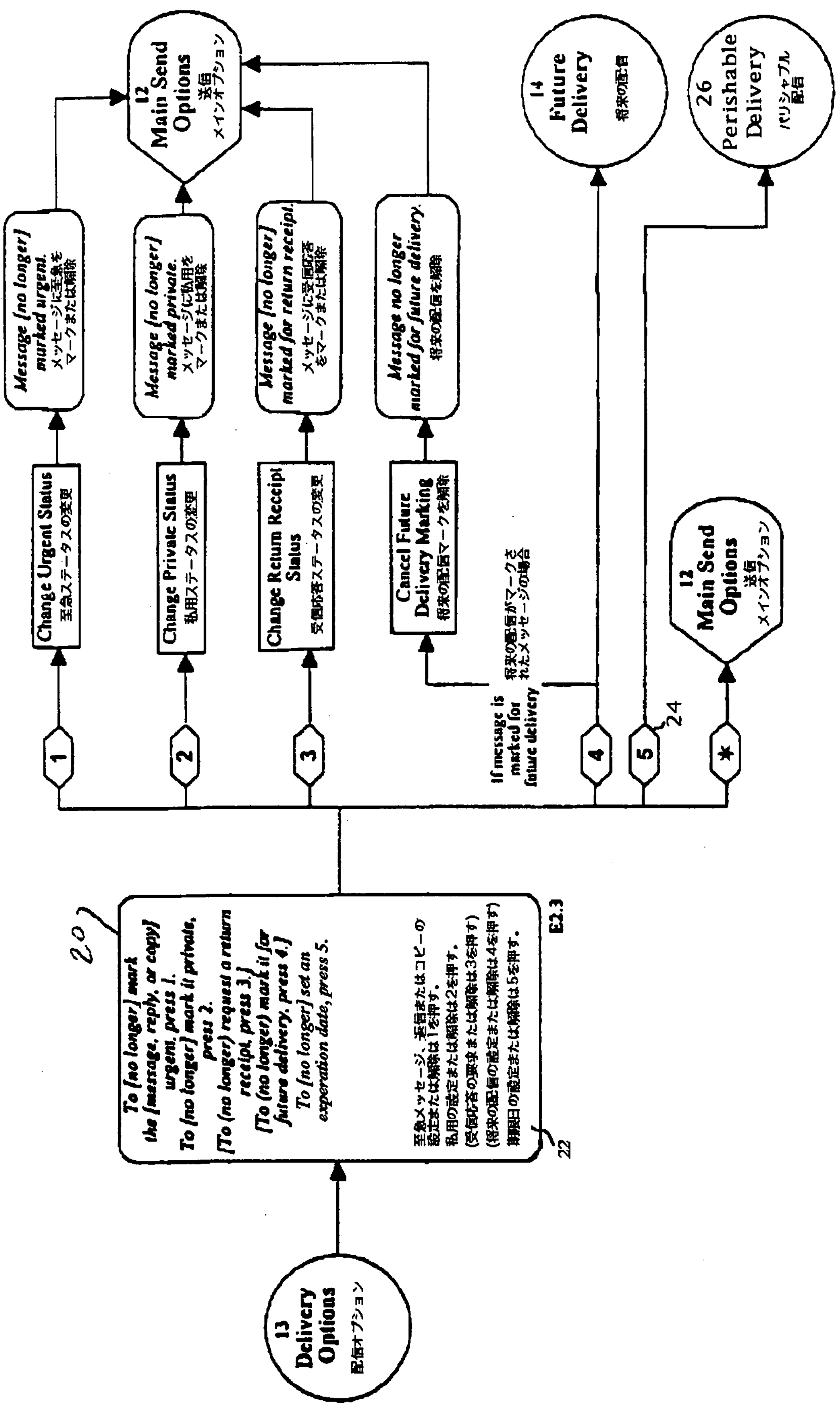
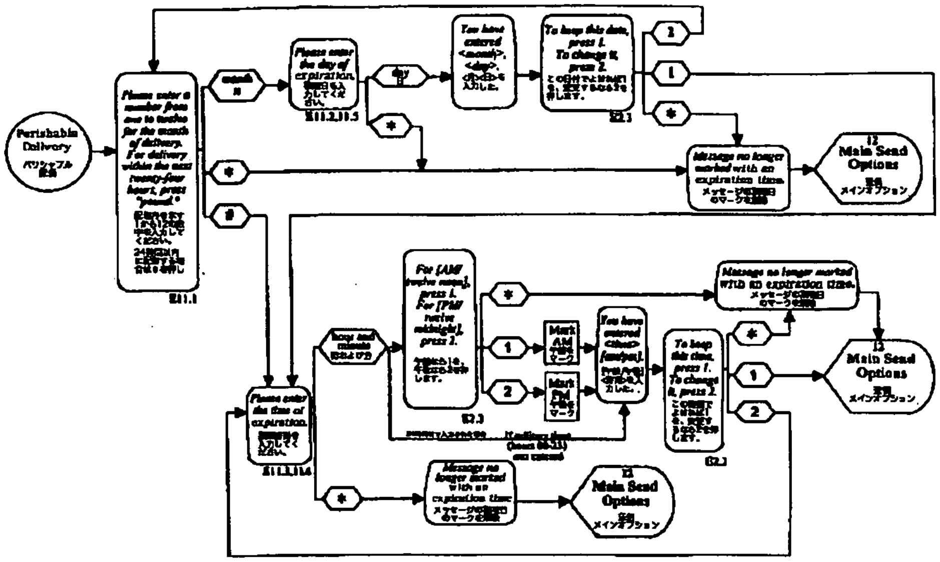

32
Hex
Offset
1 Byte
Fields
0x0000
0x0008
0x0010
0x0018
0x0020
0x0028
0x0030
0x0038
0x0040
0x0048
0x0050
0x0058
link_ref_cnt
creation_time
creator (26 Bytes)
msg_poentry (16 Bytes)
rfu (41 Bytes)
deletion_time
flags
expiration_time
36

Fig 6

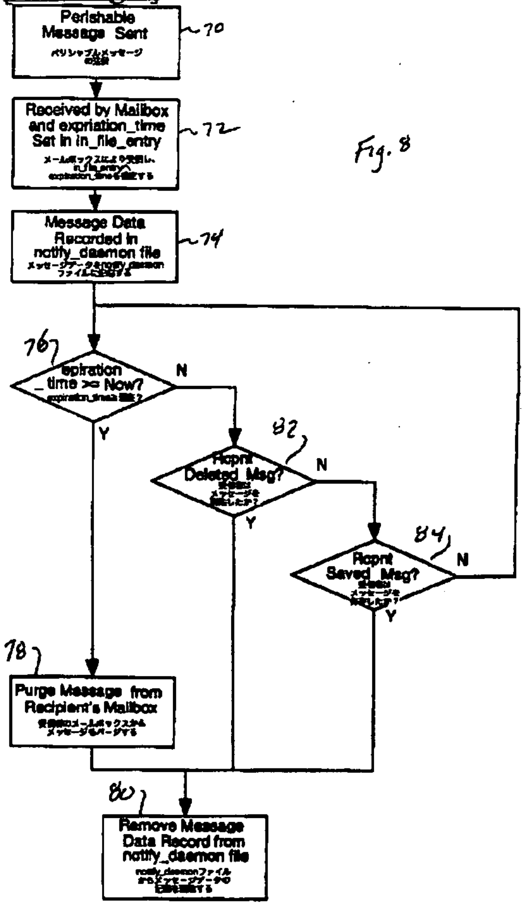
[Drawing 3]


13 Delivery Options 配信オプション
20
To [no longer] mark the [message, reply, or copy] urgent, press 1.
To [no longer] mark it private, press 2.
[To (no longer) request a return receipt, press 3.]
[To (no longer) mark it for future delivery, press 4.]
To [no longer] set an experation date, press 5.
至急メッセージ、返信またはコピーの設定または解除は1を押す。
私用の設定または解除は2を押す。
(受信応答の要求または解除は3を押す)
(将来の配信の設定または解除は4を押す)
期限日の設定または解除は5を押す。
22
E2.3
1
2
3
4
5
24
*
If message is marked for future delivery
将来の配信がマークされたメッセージの場合
Change Urgent Status 至急ステータスの変更
Change Private Status 私用ステータスの変更
Change Return Receipt Status 受信応答ステータスの変更
Cancel Future Delivery Marking 将来の配信マークを解除
Message [no longer] marked urgent. メッセージに至急をマークまたは解除
Message [no longer] marked private. メッセージに私用をマークまたは解除
Message [no longer] marked for return receipt. メッセージに受信応答をマークまたは解除
Message no longer marked for future delivery. 将来の配信を解除
12 Main Send Options 送信 メインオプション
14 Future Delivery 将来の配信
26 Perishable Delivery パリシャブル配信
12 Main Send Options 送信 メインオプション

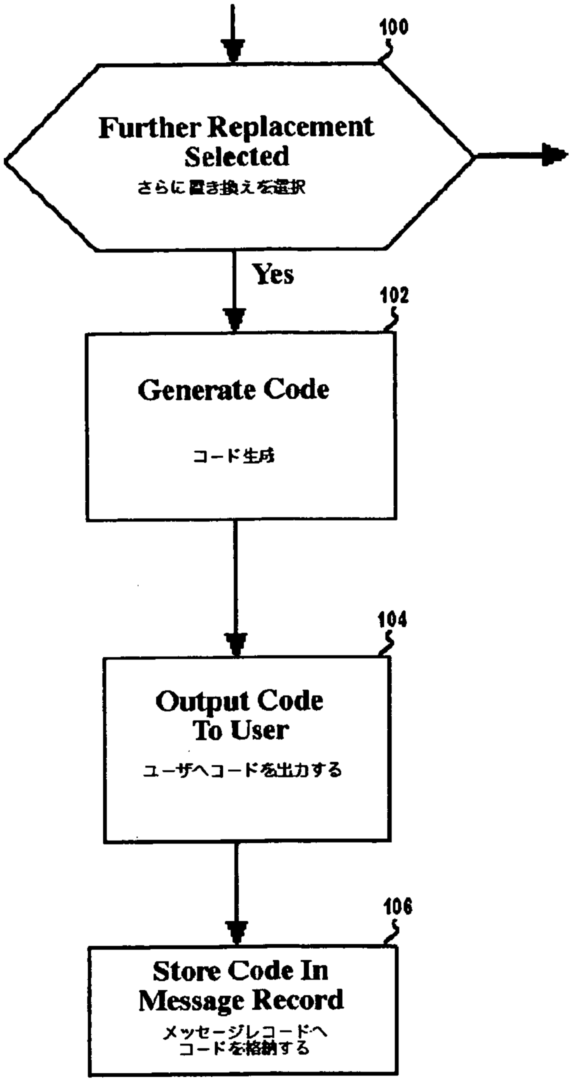
[Drawing 4]


Perishable Delivery
パリシャブル配信
Please enter a number from one to twelve for the month of delivery. For delivery within the next twenty-four hours, press "pound."
month
*
#
Please enter the day of expiration.
day
*
You have entered <month>, <day>.
To keep this date, press 1. To change it, press 2.
2
1
*
Message no longer marked with an expiration time.
12 Main Send Options
メインオプション
Please enter the time of expiration.
hour and minute
For [AM twelve noon], press 1. For [PM twelve midnight], press 2.
*
1
2
Mark AM
Mark PM
You have entered <time> [am/pm].
To keep this time, press 1. To change it, press 2.
*
1
2
Message no longer marked with an expiration time.
12 Main Send Options
If military time (hours 00-11) was entered
*
Message no longer marked with an expiration time
12 Main Send Options

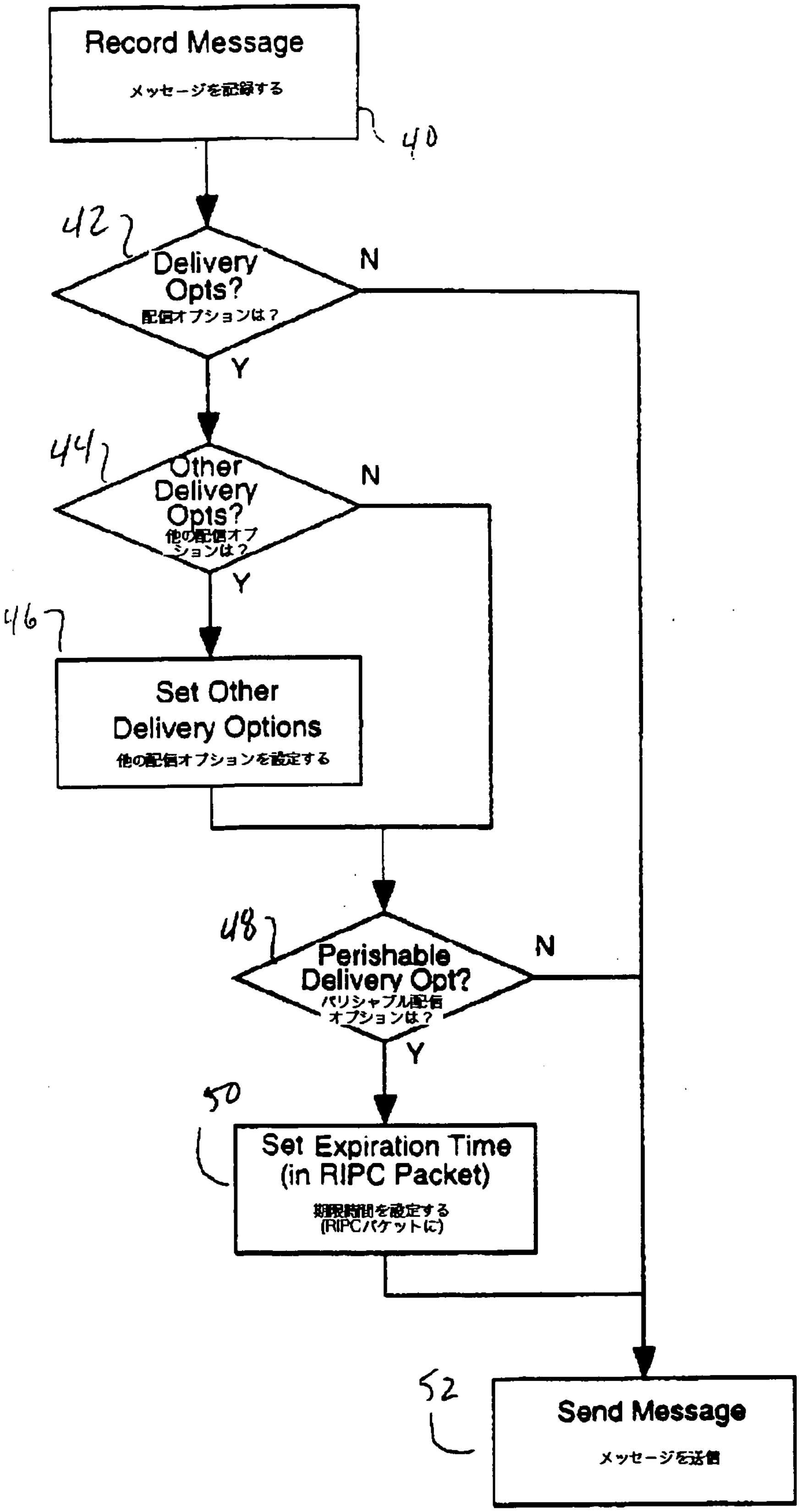
[Drawing 8]


Perishable Message Sent
パリシャブルメッセージの送信
70
Received by Mailbox and expriation_time Set in in_file_entry
72
Message Data Recorded in notify_daemon file
74
76
expiration_time >= Now?
N
Y
82
Rcpnt Deleted Msg?
N
Y
84
Rcpnt Saved Msg?
N
Y
78
Purge Message from Recipient's Mailbox
80
Remove Message Data Record from notify_daemon file
Fig. 8

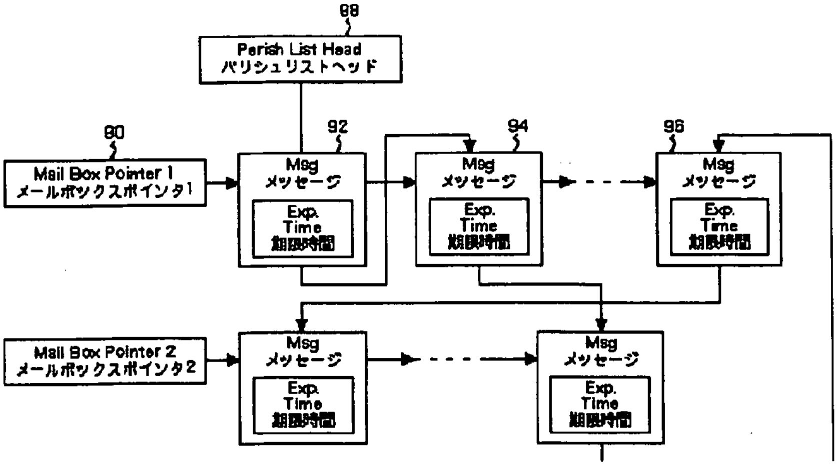
[Drawing 10]


100
Further Replacement Selected
さらに置き換えを選択
Yes
102
Generate Code
コード生成
104
Output Code To User
ユーザへコードを出力する
106
Store Code In Message Record
メッセージレコードへ
コードを格納する

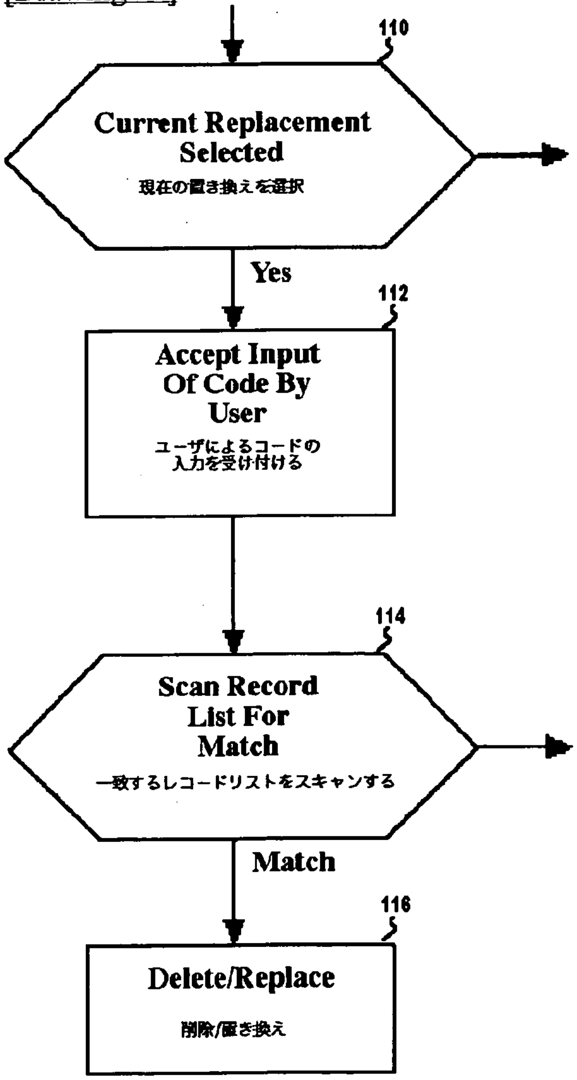
[Drawing 7]


Record Message
メッセージを記録する
40
42
Delivery Opts?
配信オプションは？
N
Y
44
Other Delivery Opts?
他の配信オプションは？
N
Y
46
Set Other Delivery Options
他の配信オプションを設定する
48
Perishable Delivery Opt?
パリシャブル配信オプションは？
N
Y
50
Set Expiration Time (in RIPC Packet)
期限時間を設定する (RIPCパケットに)
52
Send Message
メッセージを送信

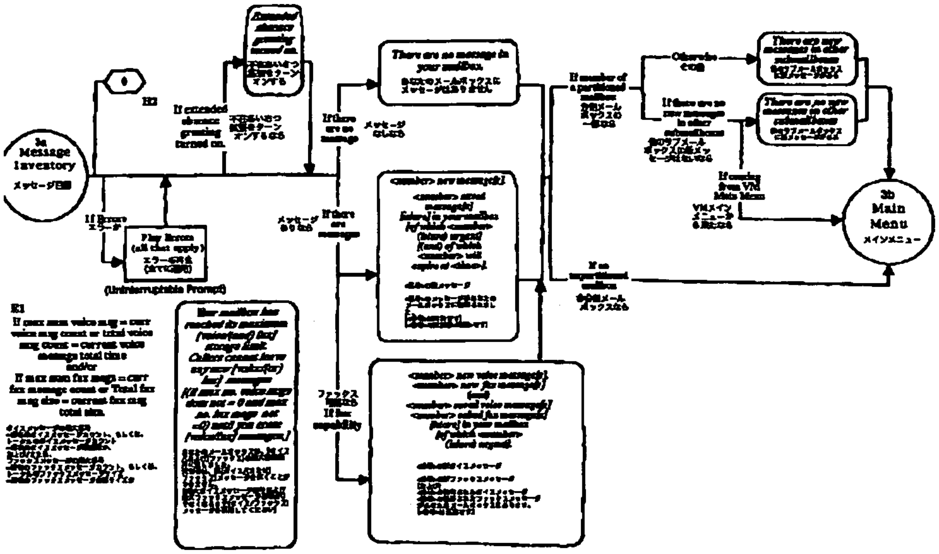
[Drawing 9]


98
Perish List Head
パリシュリストヘッド
90
Mail Box Pointer 1
メールボックスポインタ1
92
94
96
Msg
メッセージ
Exp.
Time
期限時間
Mail Box Pointer 2
メールボックスポインタ2

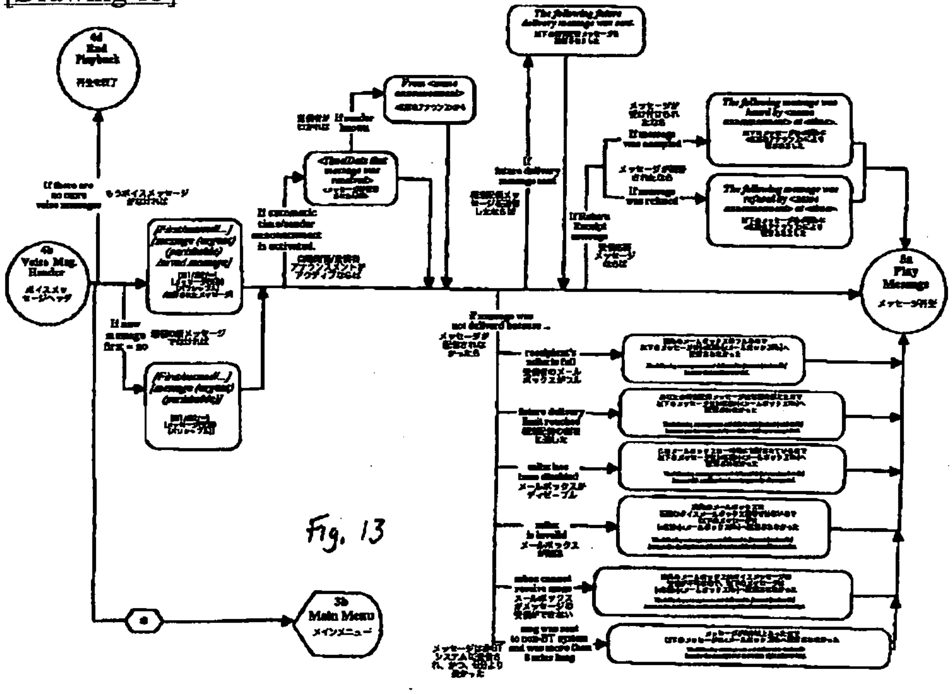
[Drawing 11]


110
Current Replacement Selected
現在の置き換えを選択
Yes
112
Accept Input Of Code By User
ユーザによるコードの入力を受け付ける
114
Scan Record List For Match
一致するレコードリストをスキャンする
Match
116
Delete/Replace
削除/置き換え

[Drawing 12]


3a
Message
Inventory
メッセージ目録
E2
If extended
absence
greeting
turned on.
If there
are no
message
There are no message in
your mailbox.
If there
are
message
<number> new message(s)
If Errors
エラーが
Play Errors
(all that apply)
(Uninterruptible Prompt)
E1
If max num voice msg = curr
voice msg count or total voice
msg count = current voice
message total time
and/or
If max num fax msgs = curr
fax message count or Total fax
msg size = current fax msg
total size.
If fax
capability
If member of
a partitioned
mailbox
Otherwise
There are new
messages in other
submailboxes
If there are no
new messages
in other
submailboxes
There are no new
messages in other
submailboxes
If coming
from VM
Main Menu
3b
Main
Menu
メインメニュー
If no
unpartitioned
mailbox

[Drawing 13]


4d
End
Playback
4b
Voice Msg.
Header
If there are
no more
voice messages
If new
message
first = no
If automatic
time/sender
announcement
is activated.
If sender
known
From <name
announcement>
<Time/Date that
message was
received>
The following future
delivery message was sent.
If
future delivery
message sent
If Return
Receipt
message
If message
was accepted
The following message was
heard by <name
announcement> at <time>.
If message
was refused
The following message was
refused by <name
announcement> at <time>.
5a
Play
Message
メッセージ再生
If message was
not delivered because ...
recipient's
mbx is full
future delivery
limit reached
mbx has
been disabled
mbx
is invalid
mbox cannot
receive msgs
msg was sent
to non-BT system
and was more than
5 mins long
3b
Main Menu
メインメニュー
Fig. 13

[Translation done.]

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SLEZAK ROBERT J

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(30)Priority
Priority number : 97 904475 Priority date : 04.08.1997 Priority country : US

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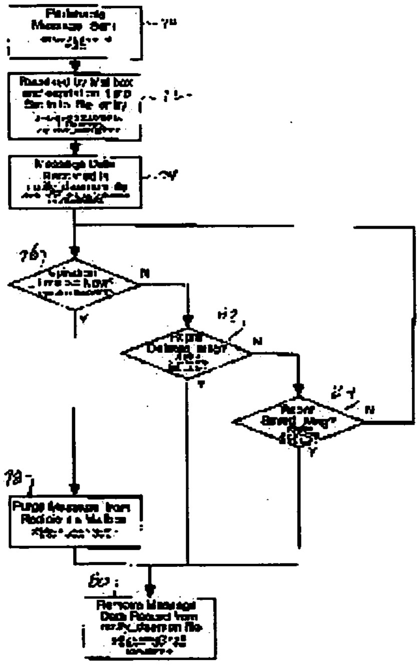
(54) SYSTEM RAVING DELIVERY OPTION FOR DELETING/REPLACING MESSAGE

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a user interface with which a message to a recipient can be remained.
SOLUTION: In the message deletion process of a system, the validity of a message stored in the system is investigated, and the message over the validity without being read by the recipient is deleted or purged. The notice of urgency in the limit of messages more than one is prepared for a caution to a subscriber related to deletion. This process issues the caution of message deletion to the transmitter or returns the message to the transmitter. Similarly, this system can provide a unique identifier for replaceable message. The identifier can be made into code generated by the system or inputted by the transmitter or unique pattern such as the voiceprint of the transmitter.



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[Date of final disposal for application]
[Patent number]
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12/58		H04M　3/42	J
H04M　3/42			

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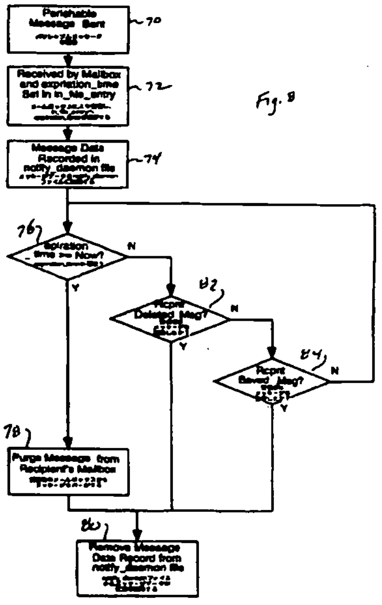
最終頁に続く

(54)【発明の名称】　メッセージを削除／置換する配達オプションを有するシステム

(57)【要約】　（修正有）
【課題】メッセージを受信者あてに残すことが可能なユーザインタフェイスを提供する。
【解決手段】システムのメッセージ削除プロセスは、システムに格納されたメッセージの期限時間を調べ、受信者により閲覧されずに期限が過ぎたメッセージを削除又はパージする。一つ以上のメッセージの期限の切迫の通知が、削除に関係する加入者へ警告用に作成される。プロセスは、送信者にメッセージの削除を警告し、又は、メッセージを送信者に返す。システムは同様に、送信者に置換可能メッセージ用のユニークな識別子の提供を可能にする。識別子は、システムにより生成、又は、送信者により入力されたコード、あるいは、送信者のボイスプリントのようなユニークなパターンにできる。


Perishable Message Sent
70
Received by Mailbox and expiration_time Set in in_file_entry
72
Fig. 8
Message Data Recorded in notify_daemon file
74
76
Expiration_time >= Now?
N
Y
82
Rcpnt Deleted Msg?
N
Y
84
Rcpnt Saved Msg?
N
Y
78
Purge Message from Recipient's Mailbox
80
Remove Message Data Record from notify_daemon file

【特許請求の範囲】

【請求項１】　送信者により記録される受信者あてメッセージの期限時間の設定を前記送信者に可能にし、
前記期限時間が過ぎると前記メッセージを削除することを特徴とするメッセージ処理。

【請求項２】　前記受信者がメッセージを閲覧すると、そのメッセージは削除されないことを特徴とする請求項1に記載されたメッセージ処理。

【請求項３】　メッセージを蓄積するシステムであって、ユーザに受信者あてのメッセージの格納、および、前記メッセージの期限時間の指定を可能にするユーザインタフェイスを有することを特徴とするシステム。

【請求項４】　さらに、前記期限時間が過ぎると前記メッセージをパージするパージ手段を有することを特徴とする請求項2に記載されたシステム。

【請求項５】　送信者によって記録される受信者あてメッセージの期限時間の設定を前記送信者に可能にし、前記期限時間が過ぎると前記メッセージを削除する処理を有することを特徴とするコンピュータ可読記録媒体。

【請求項６】　送信者によって格納される受信者あてメッセージの期限時間を有するメッセージが記録され、前記期限時間は、それを過ぎると前記メッセージの削除に使用されることを特徴とするコンピュータ可読記録媒体。

【請求項７】　ユニークな置換識別子を有する置換可能なメッセージを格納し、
前記識別子により前記置換可能なメッセージが指定されると、前記置換可能なメッセージを削除または置換メッセージに置き換えることを特徴とするメッセージ処理。

【請求項８】　ユニークな置換識別子を有する置換可能なメッセージを格納し、前記識別子により前記置換可能なメッセージが指定されると、前記置換可能なメッセージを削除または置換メッセージに置き換えるコンピュータシステムを有することを特徴とするメッセージシステム。

【請求項９】　ユニークな置換識別子を有する削除可能なメッセージを格納し、
前記識別子により前記削除可能なメッセージが指定されると、前記削除可能なメッセージを削除することを特徴とするメッセージ処理。

【請求項１０】　ユニークな置換識別子を有する削除可能なメッセージを格納し、前記識別子により前記削除可能なメッセージが指定されると、前記削除可能なメッセージを削除するコンピュータシステムを有することを特徴とするメッセージ蓄積システム。

【請求項１１】　受信者に格納されたメッセージを知らせ、格納された未閲覧のメッセージに期限時間を設定するユーザインタフェイスを有することを特徴とするメッセージ蓄積システム。

【請求項１１】　前記メッセージが削除される所定時間前に前記知らせを発生する請求項11に記載されたメッセージ蓄積システム。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】本発明は、無効になり削除または置き換えられるメッセージを明示するための、ボイスメールシステムのような、メッセージシステムをユーザに与えるシステムに関し、とくに、メッセージを残す個人が、メッセージを削除する時刻/日付を明示することができる、または、もう有効ではなく削除または現在のメッセージに置き換えられる特定の先のメッセージを明示することができるシステムに関するものである。

【０００２】

【従来の技術】ボイスメールシステム、電子メールシステム、その他のような現在のメッセージシステムにより、送信者（個人または機械）は、他人または受信者あてのメッセージを残すことができる。送信者は、「至急」メッセージを印したり、着信応答を要求するような配達オプションを明記することができる。幾つかのシステムは、30日のような特定の期間後にすべてのメッセージが削除されるようにマークするシステムレベルの特徴を含む。しかしながら、送信者はいつメッセージが削除されるべきかを明記することはできない。これは、もう有効ではないメッセージを聞く場合、受信者側に、必要のない作業をもたらす。例えば、受信者が関係するミーティングのためにメッセージが残され、かつ、そのミーティングが始まった後まで受信者がそのメッセージを聞かなかった場合、受信者の時間は無駄になる。送信者が、メッセージの期限日を明示することができるメッセージ配信オプションが必要ではないだろうか。

【０００３】メッセージシステムの幾らかの加入者は、天候や株価のようなメッセージの自動配信を要求する。そのような自動配信メッセージが多数蓄えられるまで、加入者が蓄えられたメッセージを聞かないと、その加入者は遅れたメッセージを聞くことで時間を無駄にする。以前のメッセージをより現在のメッセージに自動的に置き換える能力が必要ではないだろうか。

【０００４】

【発明の要約】本発明の目的は、メッセージの送信者が、受信者あてのメッセージを残すことができ、そのメッセージがいつ削除されるべきかの明示を可能にすることにある。

【０００５】加えて、本発明は、送信者によって指定された期限日を有するメッセージが、その期限になっても受信者により再生または閲覧されていない場合に、それらのメッセージだけを削除することを目的とする。

【０００６】また、本発明の目的は、メッセージの供給源を見分ける能力を提供し、その供給源が、以前に蓄えられたメッセージを削除または置き換えることを可能にすることにある。

【０００７】さらに、本発明は、無効なメッセージの必要のない蓄積を削減することを目的とする。

【０００８】また、本発明は、メッセージシステムに格納された無意味なメッセージの数を削減することを目的とする。

【０００９】加えて、本発明は、メッセージ配信オプションを超えるコントロールをユーザに与えることを目的とする。

【００１０】また、本発明は、期限日を含み、受信者により閲覧されずに削除されたメッセージを送信者に随意通知することを目的とする。

【００１１】同様に、本発明の目的は、未読のメッセージが削除された場合に、その削除されたメッセージを送信者に返すことで、その送信者による未読メッセージの内容チェックを可能にすることにある。

【００１２】また、本発明は、期限が過ぎたメッセージに割り付けられたストレージを回収することを目的とする。

【００１３】上記の目的は、メッセージの配信オプションの仕様の一部として「パリシャブル（perishable: 腐りやすい、消滅しやすい）」メッセージの期限日および/または時刻を、ユーザが明示することができるシステムにより達成される。このシステムのメッセージを削除するプロセスは、メッセージの期限をチェックし、受信者によって閲覧されず期限が過ぎたメッセージを削除するものである。削除プロセスは、送信者にメッセージが削除されたことを随意警告し、および/または、メッセージを送信者に返す。このシステムは、メッセージが記録されるときにメッセージの識別子を送信者に提供することができ、この識別子は、後に、それらを置き換えまたは削除するために以前に格納された未読のメッセージを見つけるのに使用される。識別子は、ボイスプリント(voice print)のようなユニークなコードまたはユニークなパターンである。

【００１４】他の目的および長所はともに、後述する実施形態、並びに、請求項に記載された構成および動作から明らかになるだろう。本願の一部を形成する添付図面の参照において、同じ符号は同じ部分を参照するものである。

【００１５】

【発明の実施の形態】本発明は、ボイスメールメッセージのようなメッセージに、メッセージの送信者により期限日/時刻の印すことを可能にするものである。期限日/時刻を過ぎると、メッセージを格納するシステムは、所期の受信者により読まれていないメッセージを削除またはパージ(purge)する。

【００１６】本発明は、米国特許第5,029,199号に記載され、以下で参照される図1に示すようなボイスメールシステム8で好ましく実行される。このようなシステム、例えばCO ACCESS(R)およびAccess NP(R)システムは、Boston Technology, Inc.から入手できる。図1に示されるようなシステム8は、一般に、メッセージがパージされるまでの残り時間を定義する保持時間を、メッセージそれぞれに印す。システム8は、その最大保持時間に達したような削除またはパージが印されたメッセージ（またはメッセージファイル）を削除するプロセスを含む。しばしば「グリムリーパ(grim reaper)」プログラムという風変わりな(whimsically)呼び方をされる、そのようなプロセスは、毎日、システムが概ねビジーではない期間に実行される。本発明は、その期限時刻に達したメッセージを削除またはパージするために、そのようなプログラムを好んで使用する。典型的な削除プロセスを毎日実行させることもできるし、あるいは、より頻繁に実行されるように、そのようなプログラムを修正することができる。

【００１７】送信者に期限日を明示する能力を提供するため、ボイスメールシステムのようなシステムにおいて、送信者に配信オプションの選択を促すためのユーザインタフェイスは、パリシャブルメッセージの配信用プロンプト手順を加えるために修正される必要がある。典型的な送信手順は図2に示される。手順の一部である配信オプション13は、図3に示されるように、修正される。配信オプションを音声で促すためのプロンプトスクリプト20は、例えば「期限日を設定（解除）するために5を押してください」を話す音声プロンプト22をメニュー項目としてを含むように修正される。処理のフローパスも「5」選択24およびパリシャブル配信プロンプト手順26を含むように修正される。この手順26の詳細は図4に示される。

【００１８】加入者から図1に示されるようなボイスメールシステムへ送られるメッセージはメッセージファイルに格納される。メッセージレコード（またはエントリ）の連結リストは、加入者それぞれのメッセージファイルの名前を含み、マスタコントロールユニット(MCU)の加入者データベース、または、専用データベース管理(DBU)システム/サーバにおいて維持される。メッセージファイル自体は、音声処理ユニット(VPU)のディスクストレージに格納される。各メッセージファイルは、図5および6に示される音声データに伴うヘッダを有する。連結リストのメッセージレコードエントリ30およびメッセージファイルのファイルヘッダ32のデータ構造はともに、メッセージ期限時間フィールド(expiration_time)34および36を含むように修正することが可能であるが、エントリ30およびヘッダ32の両方を修正する必要はない。図6のヘッダが好んで唯一修正される。修正が適切であれば、ファイルヘッダまたは連結リストのいずれかの検索は、期限が過ぎたメッセージを摘発するだろう。

【００１９】期限時刻を得る配信オプションプロセスにより実行されるイベントの手順は図7のフローチャートに示される。レコードメッセージ40のオプションが選択

されると、プロセスは「配信オプション」が選択されたか否かを42で判定する。選択されたならば、プロセスは将来配信日(future delivery date)のような「他の配信オプション」が選択されたか否かを44で判定し、それら他の配信オプションを46で設定する。そして、プロセスは「パリシャブル配信オプション」が選択されたか否かを48で判定し、選択されたならば、送信者が入力した期限時間からメッセージの期限時間を50で設定する。そして、メッセージは52で送信または格納される。

【００２０】期限日/時間にメッセージがシステムからパージされるようにするには幾つかの異なる方法がある。第一のアプローチは、パージされるべきメッセージ（連結リストのレコードまたはメッセージファイル自体の何れか）を特定するコマンドおよびメッセージの期限時間をパーリシャブルメッセージ管理プロセスに送る。そのような期限時間コマンドは、一般に、図7のステップ50と連携して送られる。図8に示されるようなパリシャブルメッセージ管理プロセスは、パリシャブルメッセージが70で送信または格納され、72で期限時間がレコードエントリ30および/またはメッセージファイルヘッダ32に設定された後に動き始める。メッセージ期限用の期限コマンドは、74でその期限コマンドにより特定される時間に基づきコマンドキューに記録される。このキューは、例えばファイルやその他の適切なメモリに格納される。通知プロセスは通常状態である待機状態から目覚め、開始されるべきイベントためにキューをスキャンする。スキャンが期限コマンドを見付けると、管理プロセスに通知される。パリシャブルメッセージ管理プロセスが知らせを受けると、76で期限時間と現在時間とを比較して、期限時間が過ぎていれば、連結リストからメッセージレコードを取り除き、前述したグリムリッパプロセスのようなプロセスを使用してメッセージファイルを削除することにより、78で受信者のメールボックスからメッセージがパージされる。

【００２１】なお、期限コマンドのキューに時間によりキューが格納されるなら、パリシャブルメッセージ管理プロセスが知らせを必要とするかを判定する通知プロセスに必要なのは、キューの最初のエントリをみることだけである。

【００２２】メッセージがパージされた後、80で期限コマンドはキューから取り除かれる。キューからの除去は通知されないから、図8に示されるパージチェック手順の開始から管理プロセスを停止する。期限時間を過ぎていないなら、プロセスは82で、メッセージが既に削除されたか、80でキューからコマンドが除去されたかを知るためにチェックする。メッセージが削除されていなければ、プロセスは84でメッセージが保存されたかを知るためにチェックする。メッセージの保存は、そのメッセージが受信者により受信されたことを示す。メッセージが保存されていれば、80でキューからコマンドが取り除かれる。二つのコマンドが同じ期限時間をもつなら、通知プロセスは、それらコマンドのそれぞれについて管理プロセスに通知する。

【００２３】ステップ78におけるパージ動作は、図5のレコード30の送信者フィールドを使用して、メッセージが削除されることを送信者に通知するように設定することもできるが、メッセージが閲覧された場合に一般的な返信受付プロセスが送信者に通知するのがよい。この動作は、送信者にメッセージが削除されることを通知するよりも、そのメッセージを送信者に返すことができる。

【００２４】パリシャブルメッセージ管理の第二のアプローチは、各メッセージについてレコード30またはヘッダ32に格納された期限時間を利用する。周期的に、削除プログラムが活性化され、期限時間を過ぎたものが格納されていないかを判定するために、すべてのメッセージレコード30および/またはメッセージファイルヘッダ32が検査される。期限時間を過ぎたメッセージがあればパージされる。

【００２５】第三のアプローチは、期限時間をもつメッセージの連結リストの作成を伴う。これは、連結の更なるセットを含むようにメッセージのレコードまたはメッセージのヘッダが修正されることを要求する。このデータ構造において、図9に示されるように、各メールボックスはそのメールボックス用に、メッセージ92、94および96の連結リストへのポインタ90を含み、各メッセージはリスト内の次のメッセージへのポインタを含む。パリッシュ（perish: 枯れる、腐る）リストヘッドポインタ98によって開始されるリストが期限時間順になるように、ポインタ98は最も早い期限時間をもつメッセージ(92)を指し示し、各メッセージは次に早い期限時間をもつメッセージ(94)へのポインタをもつ。削除またはパージプロセスは、周期的に、ポインタ98を使用して期限経過リストの第一エントリを検査する。そのリスト上の第一メッセージの期限が過ぎていたら（および、そのメッセージが保存されていなかったら）、そのメッセージファイルは削除され、ポインタ98はそのリスト上の次（第二）のメッセージ(94)を指示させられる。第一メッセージの経過時間が過ぎていなければ、期限を過ぎたメッセージはないから何の動作も要求されない。このアプローチは、リストの適切なポイントのメッセージへの連結を挿入するために、そのリストをスキャンしてそのリストに仕来りどおり(conventionally)に追加される期限が設定される新規メッセージを要求する。

【００２６】削除する代わりにメッセージを古びさせれば、それらを新しいメッセージに置き換えることができる。上述した記録プロセスの間で、将来置き換えられるだろうメッセージを指定し、かつ、置き換えられるべきメッセージを見分けるために、送信者が「他の配信オプション」を変更することを可能にする。図10に示されるように、100でユーザがこのオプションを選択すると、

システムは、102で生成したメッセージを見分けるためのユニークなコードを、104で送信者に返信または提供し、そして106でそのコードをレコード30に格納する。随時考える代わりに、送信者は、そのユニークなコードを供給または入力することができるので、思い出すのが容易なコードの選択が可能になる。後日、置き換え可能なメッセージが格納されるメールボックスに、送信者が再び働きかけると、図11に示されるように、配信オプションプロセスは、110でメッセージを置き換えるオプションを選択し、112で置き換えられるべきメッセージをユニークなコードにより指定することを可能にする。そして、システムは、114でユニークなコードを使用してメールボックスのメッセージリストをサーチし、116で既に置換または保存されていない置き換えられるべきメッセージを検出して、新しいメッセージをメッセージリストに加える。勿論、ユニークなコードと一緒にメッセージは、置き換えられる代わりに、正に削除されることもできる。

【００２７】メッセージの置き換えにおけるさらなる改善は、置換メッセージが記録されると同時に、送信者のボイスプリントが仕来りどおり(conventionally)に得られることを伴う。メールボックスのメッセージをサーチして一致する音声を見付けるために、後日、送信者のボイスプリントが得られ使用される。一致するものが見付かった場合、送信者はメッセージを再生することができ、見付かったメッセージを置換メッセージに置き換えることが可能になる。

【００２８】ユニークなコードまたは識別子は、本質的に「大丈夫だ」と言える、置き換えられるよりも削除されるべき、以前に格納されたメッセージを、送信者が識別することを可能にするために使用可能である。

【００２９】送信者および受信者の両方がこのシステムの加入者の場合、送信者のメールボックスIDはユニークな識別子として使用できる。

【００３０】本発明のプロセスおよびデータ構造体は、通常、図1のシステムのハードディスク媒体上に格納されるが、プロセスはフロッピディスク、ROMおよびPROMのような他のメディアに格納されることもできる。

【００３１】メッセージの受信者にとって使い易いシステムを作成するために、好ましくは、受信者がメールボックスにアクセスするとシステムは、パリシャブルメッセージをチェックし、受信者が一つまたはそれ以上のパリシャブルメッセージをもつことを受信者に知らせ、同じ方法で、至急メッセージについても知らせる。システムは、とくに、次の24時間内に期限が過ぎるだろうメッセージの数を示すこともできる。システムは、期限が経過した未閲覧のメッセージについて受信者に知らせることもできる。メッセージの数および期限時間を知らせるためのインタフェイスプロンプトシーケンスの変更は図12に示される。さらに、システムは、加入者がメッセージを再生またはスキップするためにメッセージリストを介して加入者のメールボックスに入った際に、個々のメッセージがパリシャブルメッセージかを示すことができる。これは図13のインタフェイスシーケンスに示されている。

【００３２】受信者へメッセージが再生される場合、システムは、記録順にそれらを再生すること、または、高い優先度でパリシャブルメッセージを再生することができる。

【００３３】本発明は、ボイスメールシステムのメッセージを重視して記述された。しかしながら、本発明は、テキスト、ファクシミリ、電子メール、ビデオ、その他のような他のタイプのメッセージシステムに応用可能である。同様に、本発明は、期限時間または期限日の設定することを重視して記述された。それらに代わり、可変の保持期間がユーザにより設定されることができる。同様に、本システムは、可変の時間を設定することを重視して記述された。本システムは、「月末」のような予め設定された期限時間をユーザに選択可能にすることもできる。同様に、本発明は、期限過ぎのメッセージを期限時間に検出することを重視して記述された。この検出動作は、代わって、毎晩のような特定の間隔で実行されることもできる。

【００３４】本発明の多くの特徴および利点は詳述された実施形態から明らかであり、従って、添付されたクレームは、本発明の本来の意図および範囲に入るそのような特徴および利点のすべてをカバーすることを意図している。さらに、当業者は、多数の変形および変更をたやすく見い出すだろうから、本発明は図示および記述された構成および動作に制限されず、従って、訴えられるだろうすべての適切な変形および類似は本発明の範囲に入る。

【図面の簡単な説明】

【図１】本発明に組み入れ可能なボイスメールシステム8を示す図、

【図２】メッセージの送信プロセス手順のバブルダイアグラムを示す図、

【図３】編集された配信オプションプロンプトを選択するマンマシーンインタフェイス手順を説明する図、

【図４】パリシャブルメッセージ配信オプション用のマンマシーンインタフェイスのプロンプト手順を示す図、

【図５】ボイスメッセージ用のメッセージレコード30を示す図、

【図６】ボイスメッセージ用のメッセージファイルヘッダ32を示す図、

【図７】配信プロセスを示す図、

【図８】パージプロセスを説明する図、

【図９】連結されたパリシャブルメッセージのリストを示す図、

【図１０】置換可能なメッセージ用のコードの生成を示

す図、

【図１１】メッセージの置き換えを示す図、

【図１２】多数のパリシャブルメッセージに関係する変形されたユーザインタフェイス手順を示す図、

【図１３】個々のメッセージの状態を知らせる変形されたユーザインタフェイス手順を示す図である。

【図１】

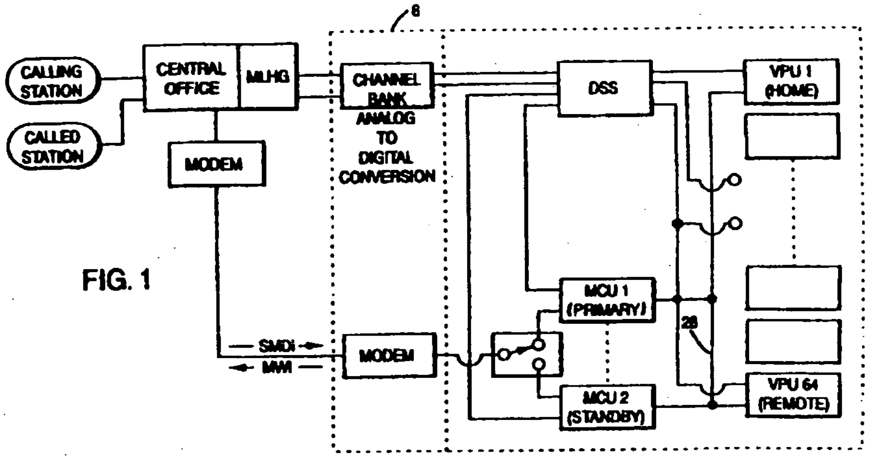

6
CALLING STATION
CALLED STATION
CENTRAL OFFICE
MLHG
MODEM
CHANNEL BANK
ANALOG TO DIGITAL CONVERSION
DSS
VPU 1 (HOME)
MCU 1 (PRIMARY)
MCU 2 (STANDBY)
VPU 64 (REMOTE)
28
SMDI
MWI
MODEM

FIG. 1

【図２】

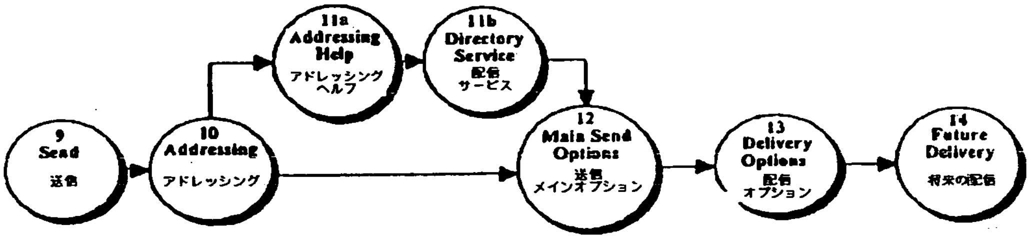
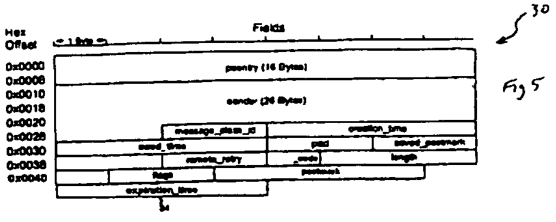
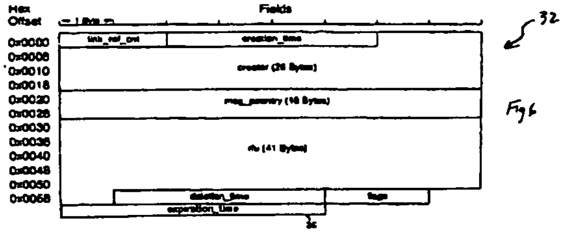

9 Send 送信
10 Addressing アドレッシング
11a Addressing Help アドレッシングヘルプ
11b Directory Service 配信サービス
12 Main Send Options 送信メインオプション
13 Delivery Options 配信オプション
14 Future Delivery 将来の配信

Fig 2

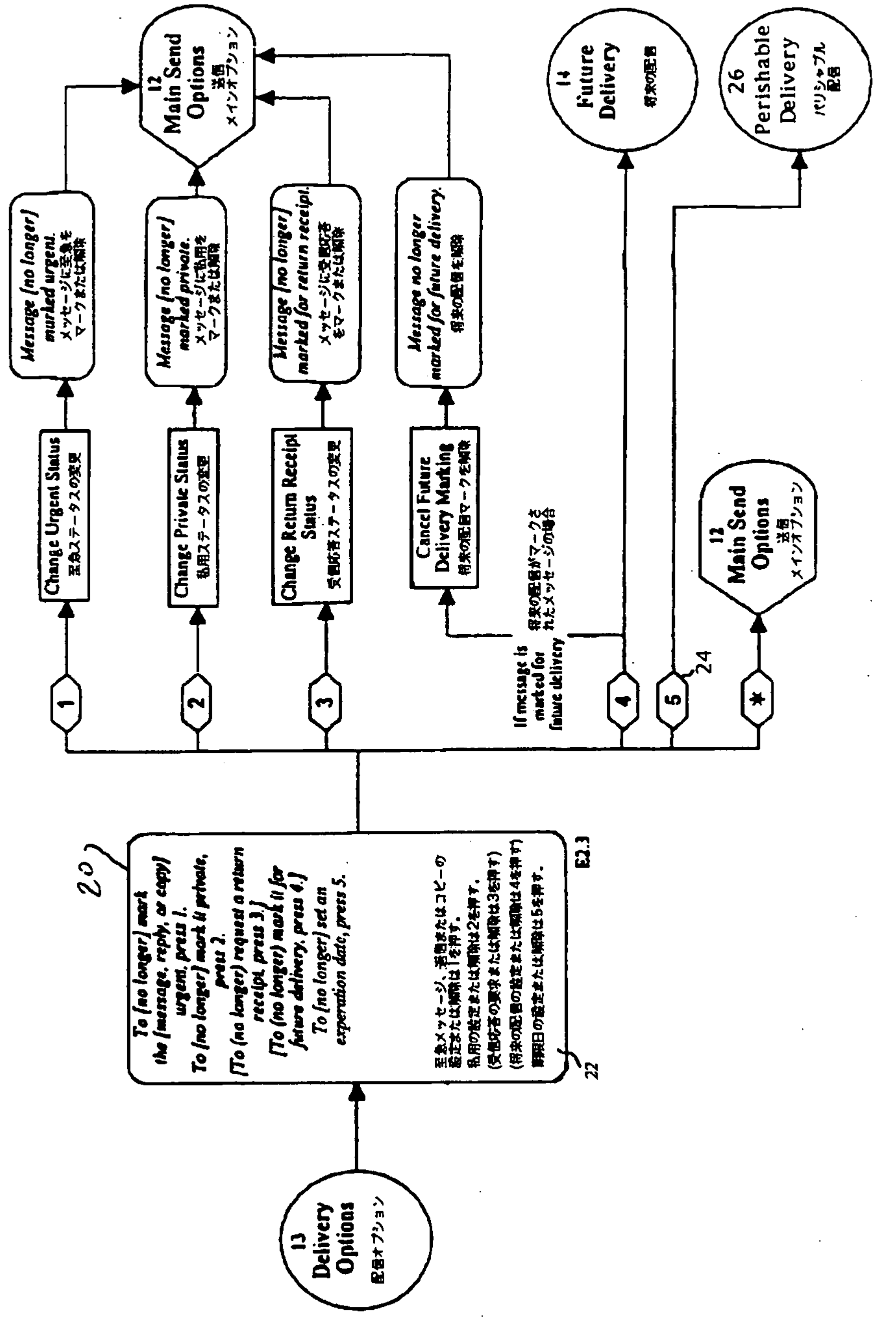
【図５】


30
Hex Offset
Fields
1 Byte
0x0000
0x0008
0x0010
0x0018
0x0020
0x0028
0x0030
0x0038
0x0040
pentry (16 Bytes)
sender (26 Bytes)
message_class_id
creation_time
send_time
pad
saved_postmark
remote_retry
_code
length
flags
postmark
expiration_time
34
Fig 5

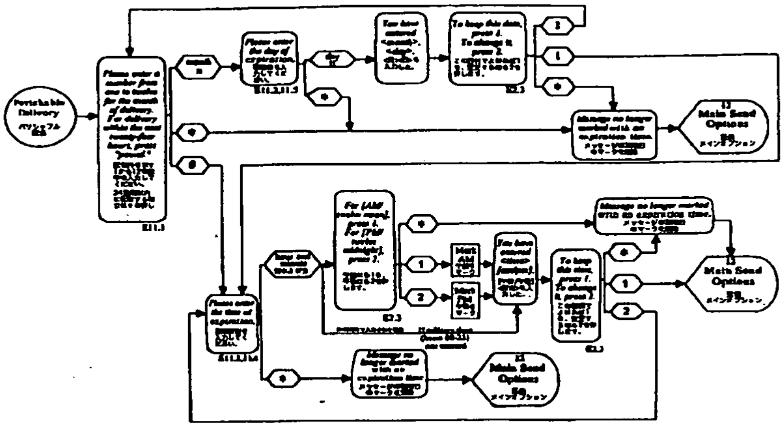
【図６】


32
Hex Offset
Fields
1 Byte
0x0000
0x0008
0x0010
0x0018
0x0020
0x0028
0x0030
0x0038
0x0040
0x0048
0x0050
0x0058
link_ref_cnt
creation_time
creator (26 Bytes)
msg_pentry (16 Bytes)
rlu (41 Bytes)
deletion_time
flags
expiration_time
36
Fig6

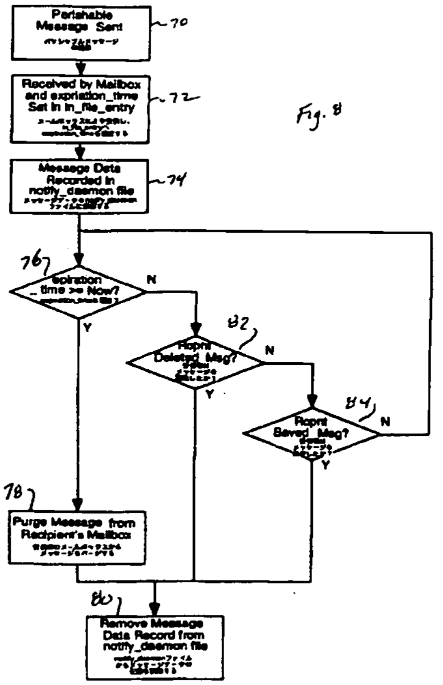
【図３】


13
Delivery Options
配信オプション
20
To [no longer] mark the [message, reply, or copy] urgent, press 1.
To [no longer] mark it private, press 2.
[To (no longer) request a return receipt, press 3.]
[To (no longer) mark it for future delivery, press 4.]
To [no longer] set an expiration date, press 5.
至急メッセージ、返信またはコピーの指定または解除は1を押す。
私用の指定または解除は2を押す。
（受信応答の要求または解除は3を押す）
（将来の配信の指定または解除は4を押す）
期限日の指定または解除は5を押す。
22
E2.3
1
2
3
4
5
24
*
Change Urgent Status
至急ステータスの変更
Change Private Status
私用ステータスの変更
Change Return Receipt Status
受信応答ステータスの変更
Cancel Future Delivery Marking
将来の配信マークを解除
If message is marked for future delivery
将来の配信がマークされたメッセージの場合
Message [no longer] marked urgent.
メッセージに至急をマークまたは解除
Message [no longer] marked private.
メッセージに私用をマークまたは解除
Message [no longer] marked for return receipt.
メッセージに受信応答をマークまたは解除
Message no longer marked for future delivery.
将来の配信を解除
12
Main Send Options
送信メインオプション
14
Future Delivery
将来の配信
26
Perishable Delivery
パリシャブル配信
12
Main Send Options
送信メインオプション

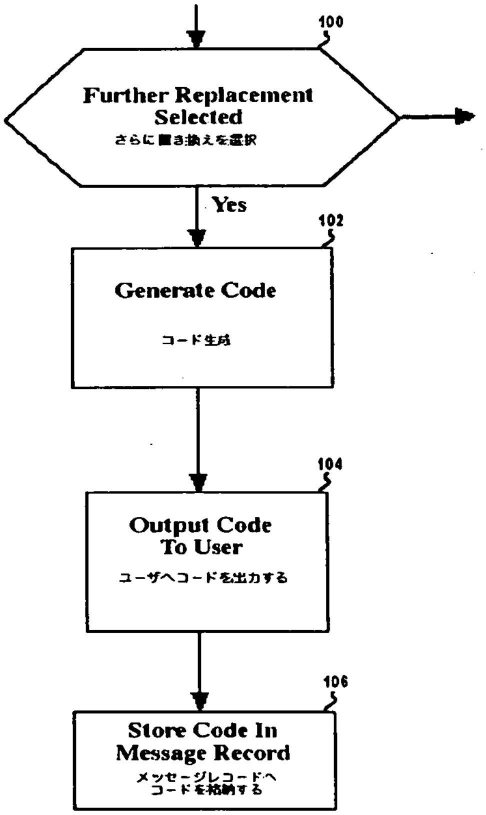
【図４】


Perishable Delivery
パリシャブル配達
month
day
#
0
1
2
Please enter the time of expiration.
Main Send Options
メインオプション
Mark AM
Mark PM
Main Send Options
メインオプション
Main Send Options
メインオプション

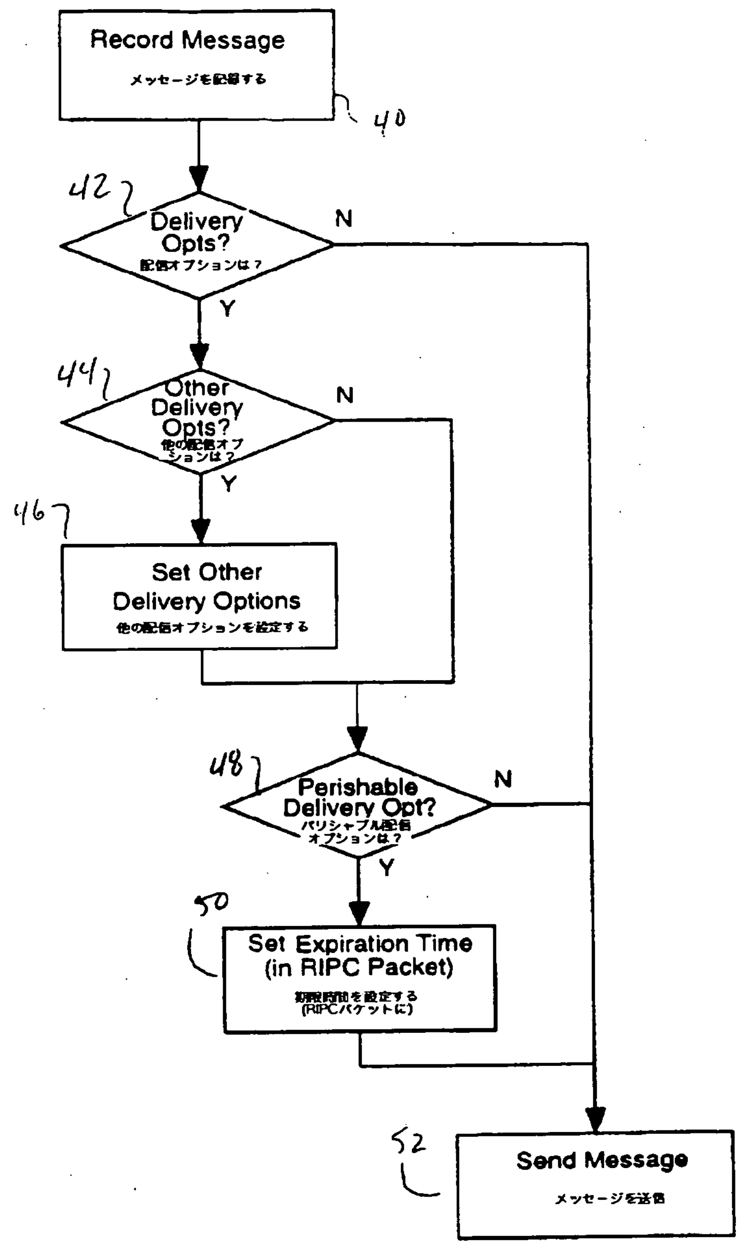
【図８】


Perishable Message Sent
70
Received by Mailbox and expiration_time Set in in_file_entry
72
Message Data Recorded in notify_daemon file
74
76
Expiration time >= Now?
N
Y
82
Rcpnt Deleted Msg?
N
Y
84
Rcpnt Saved Msg?
N
Y
78
Purge Message from Recipient's Mailbox
80
Remove Message Data Record from notify_daemon file
Fig. 8

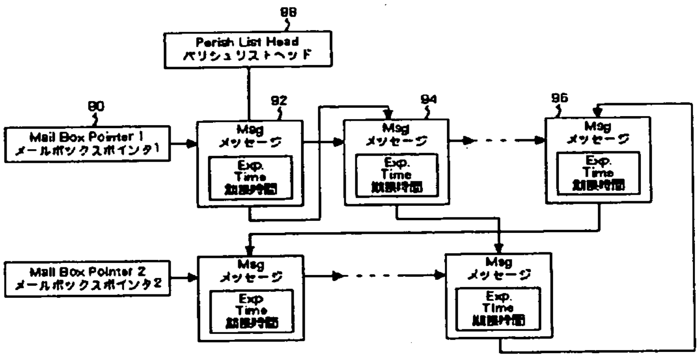
【図１０】


100
Further Replacement Selected
さらに置き換えを選択
Yes
102
Generate Code
コード生成
104
Output Code To User
ユーザへコードを出力する
106
Store Code In Message Record
メッセージレコードへ
コードを格納する

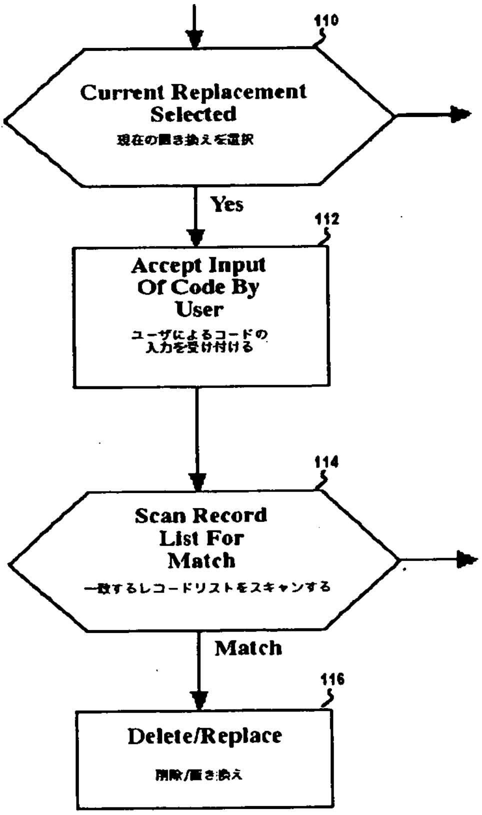
【図7】


Record Message
メッセージを記録する
40
42
Delivery Opts?
配信オプションは？
N
Y
44
Other Delivery Opts?
他の配信オプションは？
N
Y
46
Set Other Delivery Options
他の配信オプションを設定する
48
Perishable Delivery Opt?
パリシャブル配信オプションは？
N
Y
50
Set Expiration Time (in RIPC Packet)
期限時間を設定する (RIPCパケットに)
52
Send Message
メッセージを送信

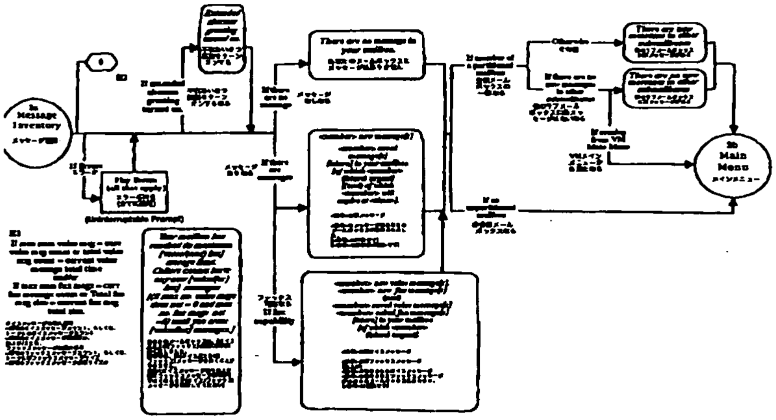
【図９】


98
Perish List Head
パリシュリストヘッド
90
Mail Box Pointer 1
メールボックスポインタ1
92
94
96
Msg
メッセージ
Exp.
Time
期限時間
Mail Box Pointer 2
メールボックスポインタ2

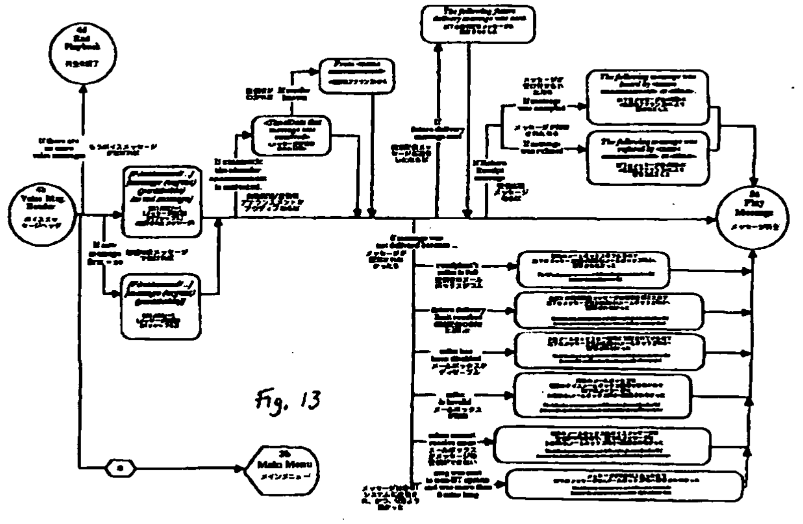
【図１１】


110
Current Replacement Selected
現在の置き換えを選択
Yes
112
Accept Input Of Code By User
ユーザによるコードの入力を受け付ける
114
Scan Record List For Match
一致するレコードリストをスキャンする
Match
116
Delete/Replace
削除/置き換え

【図１２】


Message
Inventory
There are no message in your mailbox.
Play Beeps
(Uninterruptable Prompt)
Main
Menu
メインメニュー

【図１３】


4d
End
Playback
Voice Msg
Header
Play
Message
Fig. 13
3b
Main Menu
メインメニュー

フロントページの続き

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【外国語明細書】

1. Title of Invention

Message Deletion/Replacement Delivery Option System

2. Claims

(1) A message process, comprising:

allowing a message sender to set an expiration time for a message recorded by the sender for a recipient; and

deleting the message when the expiration time has passed.

(2) A process as recited in claim 1, wherein the message is not deleted if the recipient has reviewed the message.

(3) A message storage system, comprising:

a user interface allowing a user to store a message for a recipient and designate an expiration time for the message.

(4) A system as recited in claim 3, further comprising means for purging the message when the expiration time has passed.

(5) A computer readable storage media including a process allowing a message sender to set an expiration time for a message stored by the sender for a recipient and deleting the message when the expiration time has passed.

(6) A computer readable storage media including a message having an expiration time for the message stored by a sender for a recipient and used to delete the message when the expiration time has passed.

(7) A message process, comprising:

storing a replaceable message having a unique replacement identifier; and

replacing the replaceable message with a replacement message or deleting the message when the replaceable message is specified with the identifier.

(8) A message system, comprising:

a computer system storing a replaceable message having a unique replacement identifier: and

replacing the replaceable message with a replacement message or deleting the message when the replaceable message is specified with the identifier.

(9) A message process, comprising:

storing a deletable message having unique identifier; and

deleting the deletable message when the deletable message is specified with the identifier.

(10) A message storage system, comprising;

a computer system storing a deletable message having a unique identifier and deleting the deletable message when the deletable message is specified with the identifier.

(11) A message storage system, comprising:

a user interface announcing to a stored message recipient that an unreviewed stored message is set for expiration.

(12) A system as recited in claim 11, wherein the announcing occurs at a predetermined time before the message is deleted.

3. Detailed Explanation of the Invention

[Field of the Invention]

The present invention is directed to a system that allows a user of a message system, such as a voice mail system, to specify that messages that become invalid be deleted or replaced and, more particularly, to a system that allows the person who leaves a message to specify a time/date for the deletion of a message or to specify that a particular prior message that is no longer valid be deleted or replaced with a current message.

[Description of the Related Art]

Currently message systems, such as voice mail systems, e-mail systems, etc., allow a sender (an individual or a machine) to leave a message for another person or recipient. The sender can specify delivery options, such as marking the message "urgent" or requesting a return receipt. Some systems include a system level feature whereby all messages are marked for deletion after a specified period of time, such as 30 days. However, the sender does not have the capability of specifying when a message should be deleted. This can cause unnecessary work on the part of a recipient in listening to messages that are no longer valid. For example, when a message is left for a recipient concerning a meeting and the recipient does not listen to the message until after the meeting has occurred, the recipients 9 time is wasted. What is needed is a message delivery option that allows the sender to specify a message expiration date.

Some subscribers to messaging systems request automatic delivery of messages, such as, weather and stock quotes. If the subscriber does not listen to the stored messages until after a number of such automatic messages are stored, the subscriber wastes time in listening to outdated messages. What is needed is the capability of automatically replacing a previous message with a more current message.

[Summary of the Invention.

It is an object of the present invention to allow a message sender to leave a message for a recipient and to specify when that message is to be deleted.

It is an additional object of the present invention to delete messages that have sender-specified expiration date only when the messages have not already been played to, or reviewed by, the recipient.

It is also an object of the present invention to provide the ability to identify the source of messages and allow the source to delete or replace previously stored messages.

It is a further object of the present invention to reduce the unnecessary storage of invalid messages.

It is an object of the present invention to reduce the number of irrelevant messages stored in a message system.

It is an additional object of the present invention to give users more control over message delivery options.

It is an object of the present invention to optionally the sender of a message that includes an expiration date that the message has been deleted without being reviewed by the recipient.

It is also an object of the present invention to optionally provide a copy of a deleted, but unread, message back to the sender when it is deleted, thus allowing the sender to check the contents of an unread message.

It is an object of the present invention to reclaim storage allocated for expired messages.

The above objects can be attained by a system that allows a user to specify an expiration date and/or time for a "perishable" message as part of the specification of delivery options for the message. A message deletion process of the system checks messages for expiration and deletes those that have not been reviewed by the recipient and which are expired. The deletion process can optionally alert the sender that the message has been deleted and/or return the message to the sender. The system also allows the sender to provide an identifier for the message when the message is recorded, where the identifier is later used to find previously-stored and unread messages so that they can be replaced or deleted.

The identifier can be a unique code or a unique pattern, such as a voice print.

These together with other objects and advantages, which will be subsequently apparent, reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

[Detailed Description of the Preferred Embodiment]

The present invention is directed to allowing a message, such as a voice mail message, to be marked with an expiration date/time by the message sender. When the expiration date/time has passed, the system storing the message deletes or purges the message if it has not been read by the intended recipient.

The present invention is preferably implemented in a voice mail system 8, such as depicted in Fig. 1., as described in U.S. Patent 5,029,199 which is incorporated by reference herein. Such systems, e.g. the CO ACCESS(R) and Access NP(R) systems, are available from Boston Technology, Inc. Systems 8, such as that depicted in Fig. 1, typically mark each message with a retention time that defines the time remaining before the message is purged. The systems 8 also include a process that deletes messages (or message files) that are marked for deletion or purging, such as those that have reached their maximum retention time. Such a process, which is often whimsically called a "grim reaper" program, is typically executed on a daily basis during a period in which the system is typically not busy. The present invention preferably uses such a program to delete or purge messages that have reached their expiration time. The typical deletion process that executes daily can be used or such a program can be modified to execute more often.

To provide the sender with the ability to specify an expiration date, in a system, such as a voice mail system, the user interface that prompts the sender to select among delivery options needs to be modified to add a prompt sequence for delivery of perishable messages. The typical send sequence is depicted in Fig. 2. The Delivery Options 13 portion of the sequence is modified as depicted in Fig. 3. A prompt script 20 for the delivery options voice prompts is modified to include, as a menu item, a voice prompt 22 speaking, for example, "To [no longer] set an expiration date, press 5". The process flow path is also modified to include a "5" selection 24 and the perishable delivery prompt sequence 26. This sequence 26 is depicted in more detail in Fig. 4.

The messages for a subscriber to a voice mail system, such as depicted in Fig. 1, are stored in message files. A linked list of message records (or entries), includes the names of the message files for each subscriber and is maintained in a subscriber database in a master control unit (MCU) or in a specialized database management (DBU) system/server. The message files themselves are stored in the disk storage of voice processing units (VPU). Each message file has a header followed by the voice data as depicted in Figs. 5 and 6. The data structure for the message record entry 30 in the linked list and the file header 32 of the message file can both be modified to include a message expiration time field 34 and 36, although it is not necessary that both the entry 30 and header 32 be modified. The header of Fig. 6 is preferably the one modified. If the modification is made in both places, a search of either the file headers or the linked list will uncover expired messages.

The sequence of events that is performed by the delivery options process to get the expiration time is depicted in the flow chart of Fig. 7. When the record message 40 option is selected, the process determines 42 whether "Delivery Options" has been selected. If so, the process determines 44 whether "Other Delivery Options," such as a future delivery date, have been selected and sets 46 those other delivery options. The process then determines 48 whether the "Perishable Delivery Option" has been selected and if so sets 50 the expiration time for the message from the senders input of the expiration time. The message is then sent or stored 52.

There are several different methods by which the messages that have expiration dates/times can be purged from the system. A first approach sends a command to a perishable message management process where the command specifies the message (either the record of the linked list or the message file itself) that is to be purged and the expiration time of the message. Such an expiration time command would typically be sent in association with step 50 of Fig. 7. A perishable message management process, such as depicted in Fig. 8, starts after the perishable message is sent 70 or stored and after the expiration time is set 72 in the record entry 30 and/or in the message file header 32. The expiration command for message expiration is recorded 74 in a queue of commands based on the time specified in the command. This queue can be stored, e.g., in a file or other suitable memory. A notify process awakes from a wait state on a regular basis and scans the queue for events that need to be started. If the scan discovers an expiration command, the management process is notified. When the perishable message management process receives a notification, it compares 76 the expiration time to the current time and, if the expiration time is passed, the message is purged 78 from the recipient's mailbox by removing the message record from the linked list and deleting the message file using a process, such as the grim reaper process previously mentioned.

Note that if the queue of expiration commands is a queue sorted by time then the notify process only needs to look at the first entry in the queue to determine if the perishable message management process needs to be notified.

After the message is purged, the expiration command is removed 80 from the queue. Removal from the queue stops the management process from starting the purge check sequence shown in Fig. 8 since it will not be notified. If the expiration time has not passed, the process checks 82 to see if the message has already been deleted and if so the command is removed 80 from the queue. If the message has not been deleted, the process checks 84 to see if the message has been saved, which indicates that it has been reviewed by the recipient. If the message has been saved, the command is removed 80 from the queue. If two commands have the same expiration time, the notify process notifies the management process for each of these commands.

At step 78 the purge operation can be configured to notify the sender that the message is being deleted using the sender field in the record 30 of Fig. 5, much like a conventional return receipt process notifies a sender when a message has been reviewed. The operation can also return the message to the sender rather than just notifying the sender that the message is being deleted.

A second approach to perishable message management utilizes the expiration time stored in the record 30 or the header 32 for each message. Periodically the delete program is activated and all message records 30 and/or message file headers 32 are examined to determine if the expiration time stored therein has passed. If so, the message is purged.

A third approach involves creating a linked list of messages that have expiration times. This requires the records for the messages or the headers of the message file be modified to include a further set of links. In this data structure, as depicted in Fig. 9, each mailbox includes a pointer 90 to the linked list of messages 92, 94 and 96 for the mailbox and each message includes a pointer to the next message in the list. A perish list head pointer 98 points to the message (94) that has the next earliest expiration time so that list starting with the pointer 98 is in expiration time order. Periodically, the delete or purge process examines the first entry in the expiration list using the pointer 98. If the expiration time for the first message on the list has passed (and the message has not been saved), the message file is deleted and the pointer 98 is made to point to the next (second) message (94) on the list. If the first message expiration time has not passed, no action is required because no other messages have expired. This approach requires that new messages that are set for expiration be conventionally added to the list by scanning the list to insert the links to the message in the appropriate point in the list.

Instead of deleting messages that have become aged, it is possible to replace them with a newer message. During the recording process discussed previously it is possible to modify the "Other Delivery Options" to allow a sender to specify that a message may be replaced in the future and to identify a message that is to be replaced. When the user selects 100 this option, as illustrated in Fig. 10, the system generates 102 and returns or provides 104 to the sender a unique code identifying the message and then stores 106 the code in the record 36. The sender can instead optionally be allowed to supply or input the unique code thereby allowing the sender to select a code that is easy to remember. At some future date when the sender again interacts with the mailbox where the replaceable message is stored, the delivery options process allows the sender to select 110 the option of replacing a message and then to specify 112, with the unique code, the message to be replaced as depicted in Fig. 11. The system then searches 114 the message list for the mailbox using the unique code, deletes 116 the message to be replaced, if it has not already been replaced or saved, and adds the new message to the message list. Of course, the message with the unique code can just be deleted instead of replaced.

A further refinement on the replacement of messages involves conventionally obtaining a voice print of the sender while the replacement message is being recorded. The voice print of the sender is obtained and used at a future date to search the messages in the mailbox for a matching voice. When a match is found, the sender can be played the message and is allowed to replace the found message with the replacement message.

The unique code or identifier can also be used to allow a sender to identify a previously stored message that is to be deleted rather than being replaced, essentially saying "Never mind."

When the sender and recipient are both subscribers to the system, the sender's mailbox ID can be used as the unique identifier.

The processes and data structures of the present invention are typically stored on the hard disk media of the system of Fig. 1, however, the processes can be stored on other media such a floppy disk, ROM and PROM.

To make the system easier to use for the message recipient, preferably, the system will check for perishable messages and announce to the recipient, when the recipient accesses the mailbox, that the recipient has one or more messages that are perishable in the same way that systems announce urgent messages. The system could also particularly indicate the number of messages that will expire within the next 24 hours. The system can also announce to the recipient that messages have expired unreviewed. A modification of an interface prompt sequence to announce the number of message and the time of expiration is illustrated in Fig. 12. In addition the system can indicate whether each individual message is a perishable message as the subscriber steps through the list of messages in the subscriber's mailbox to play them or skip them. This is illustrated by the interface sequence of Fig. 13.

When playing the messages to the recipient, the system can play them in time of recording order or play perishable messages with a higher priority.

The present invention has been described with respect to messages of a voice mail system. The present invention is, however, applicable to other types of message system such as text, facsimile, e-mail, video, etc. The present invention has also been described with respect to setting a time or date for expiration. Instead, a variable retention period could be set by the user. The system has also been described with respect to setting a variable time. It is possible for the system to allow the user to select preset expiration times such as "at the end of the month." The present invention has also been described with respect to detecting an expired message at the expiration time. The deletion operation could instead be performed at specified intervals such as nightly

The many features and advantages of the invention are apparent from the detailed specification and, thus, it is intended by the appended claims to cover all such features and advantages of the invention which fall within the true spirit and scope of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation illustrated and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

4. Brief Explanation of the Drawings

Fig. 1 depicts a voice mail system 8 into which the present invention can be incorporated.

Fig. 2 depicts a bubble diagram of a send process sequence for messages.

Fig. 3 illustrates a modified delivery option prompt selection man-machine-interface sequence.

Fig. 4 shows a prompt sequence of the manmachine-interface for a perishable message delivery option.

Fig. 5 is a message record 30 for a voice message.

Fig. 6 is a message file header 32 for a voice message.

Fig. 7 depicts a delivery process.

Fig. 8 illustrates a purge process.

Fig. 9 depicts a linked list of perishable messages.

Fig. 10 depicts generating a code for a replaceable message.

Fig. 11 shows replacing a message.

Fig. 12 depicts a modified user interface sequence regarding a number of perishable messages.

Fig. 13 depicts a modified user interface sequence that

announces the status of individual messages.

【図１】

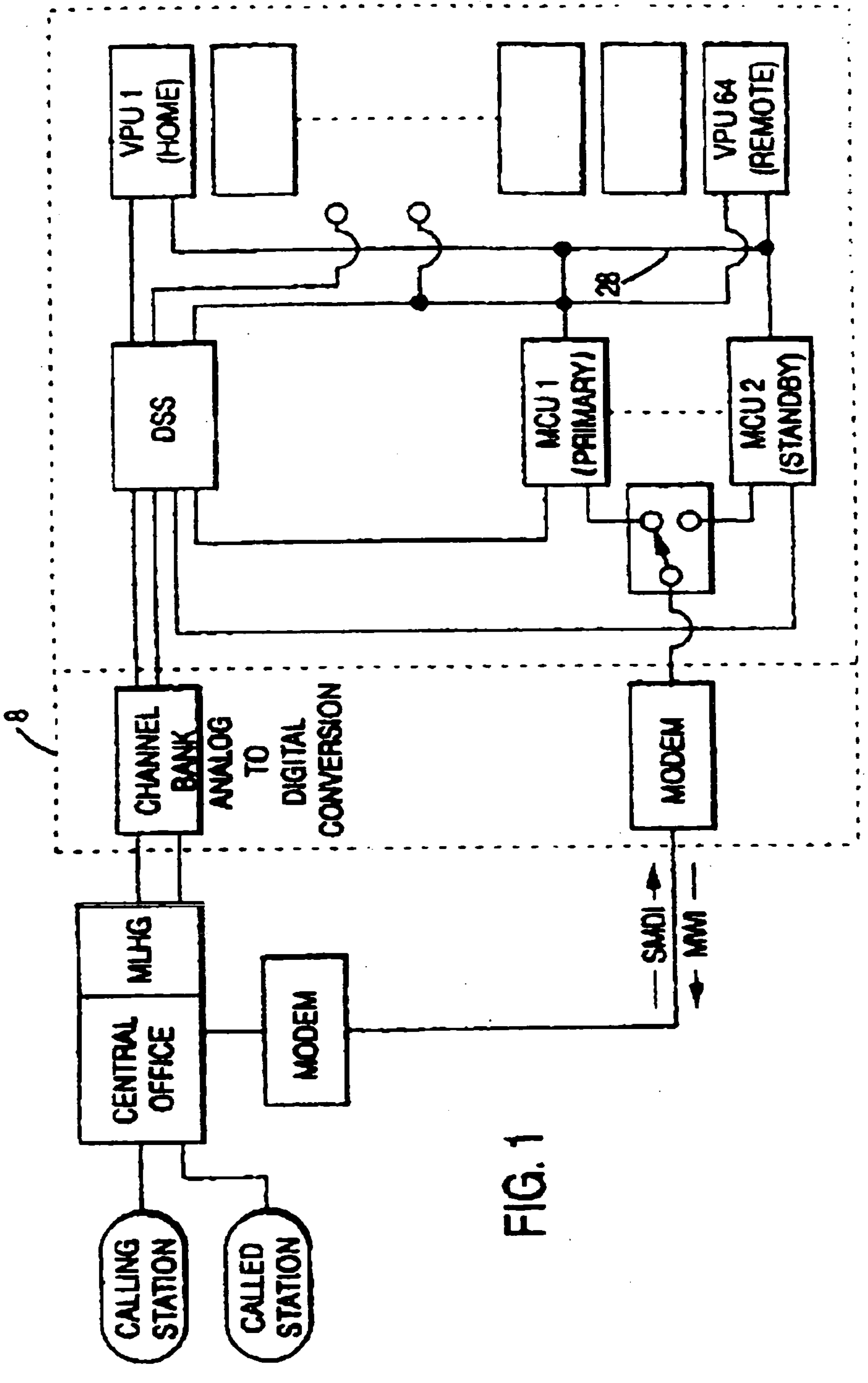

VPU 1 (HOME)
VPU 64 (REMOTE)
28
DSS
MCU 1 (PRIMARY)
MCU 2 (STANDBY)
8
CHANNEL BANK
ANALOG TO DIGITAL CONVERSION
MODEM
SMDI
MWI
MLHG
CENTRAL OFFICE
MODEM
CALLING STATION
CALLED STATION

FIG. 1

【図2】

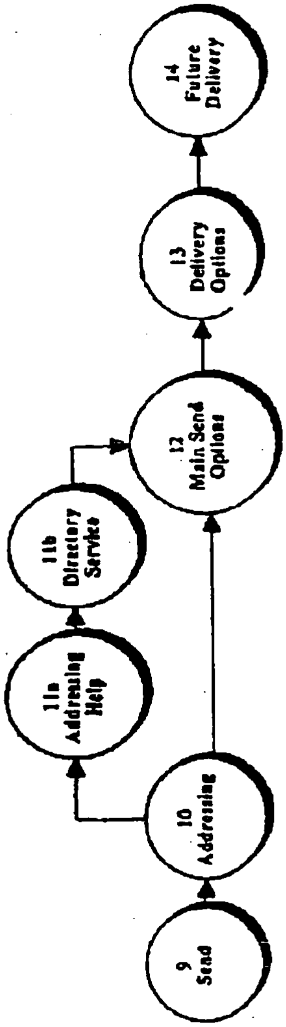
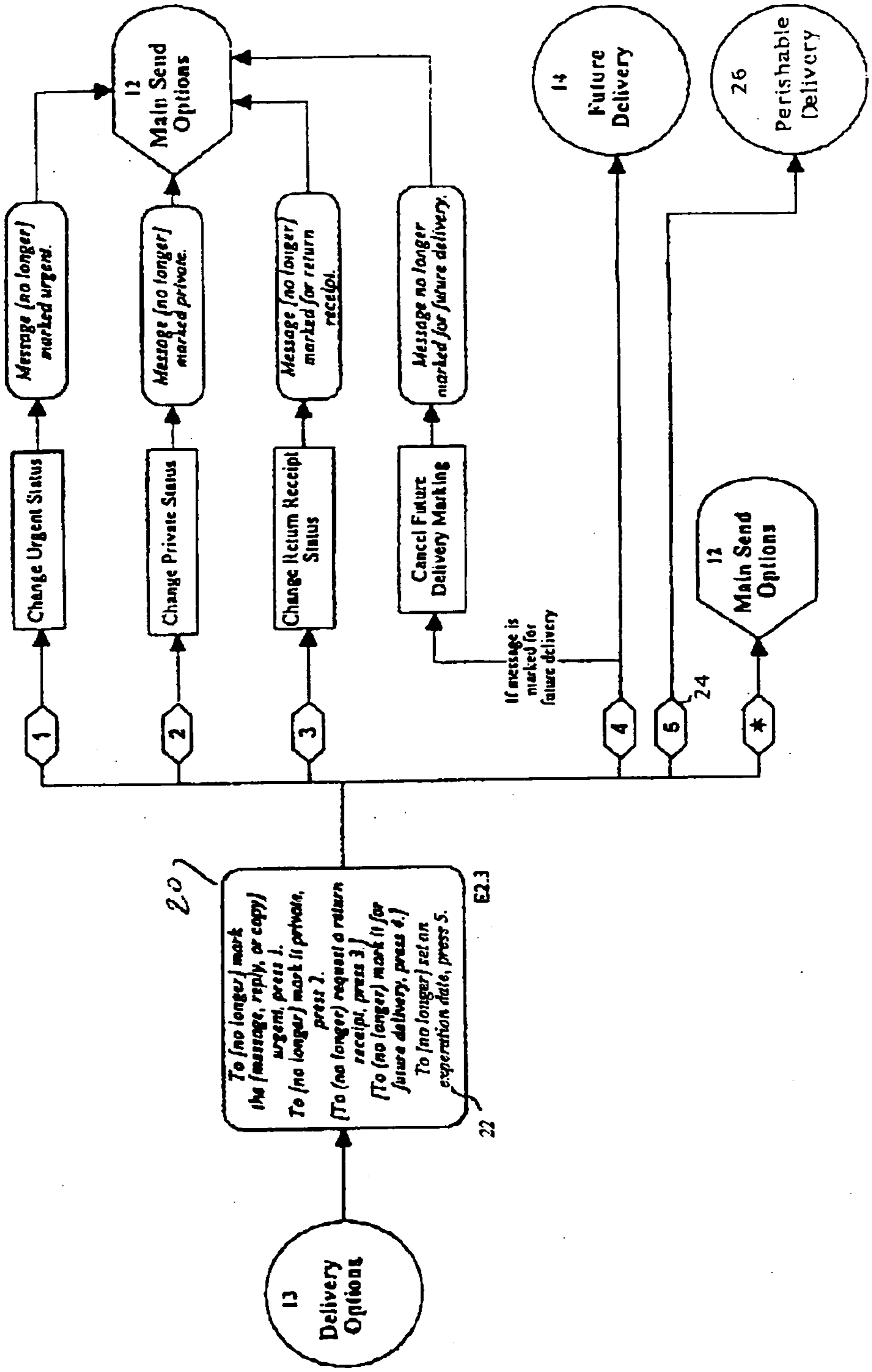
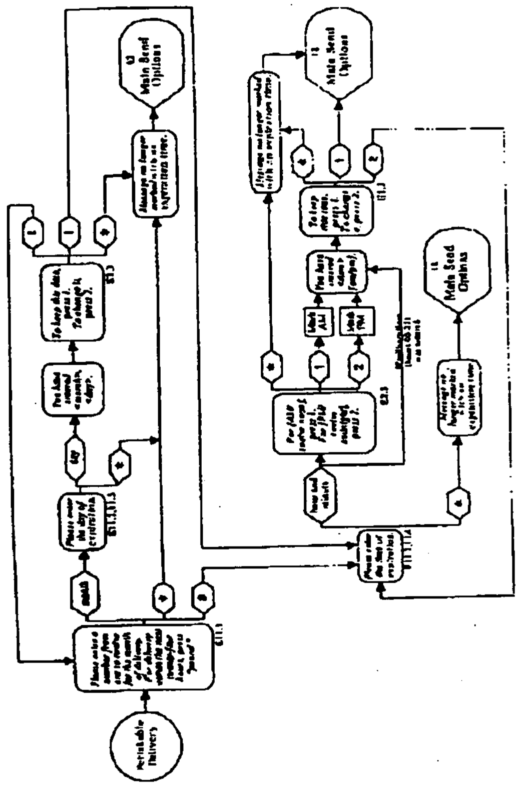

9
Send
10
Addressing
11a
Addressing
Help
11b
Directory
Service
12
Main Send
Options
13
Delivery
Options
14
Future
Delivery

Fig 2

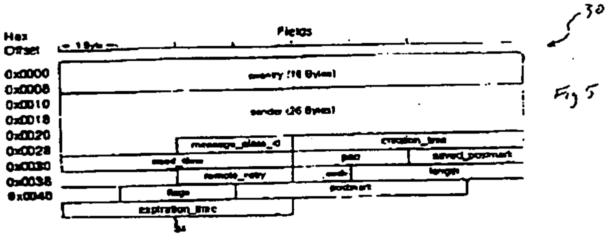
【図３】


13 Delivery Options
To [no longer] mark the [message, reply, or copy] urgent, press 1.
To [no longer] mark it private, press 2.
[To [no longer] request a return receipt, press 3.]
[To [no longer] mark it for future delivery, press 4.]
To [no longer] set an experation date, press 5.
E2.3
20
22
1
2
3
4
5
24
*
Change Urgent Status
Change Private Status
Change Return Receipt Status
Cancel Future Delivery Marking
If message is marked for future delivery
Message [no longer] marked urgent.
Message [no longer] marked private.
Message [no longer] marked for return receipt.
Message no longer marked for future delivery.
12 Main Send Options
14 Future Delivery
26 Perishable Delivery
12 Main Send Options

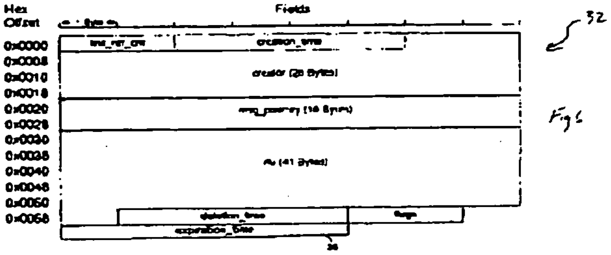
【図４】


Retrievable Delivery
Main Send Options
Main Send Options
Main Send Options
Message no longer marked with an expiration time.
Message no longer marked with an expiration time.

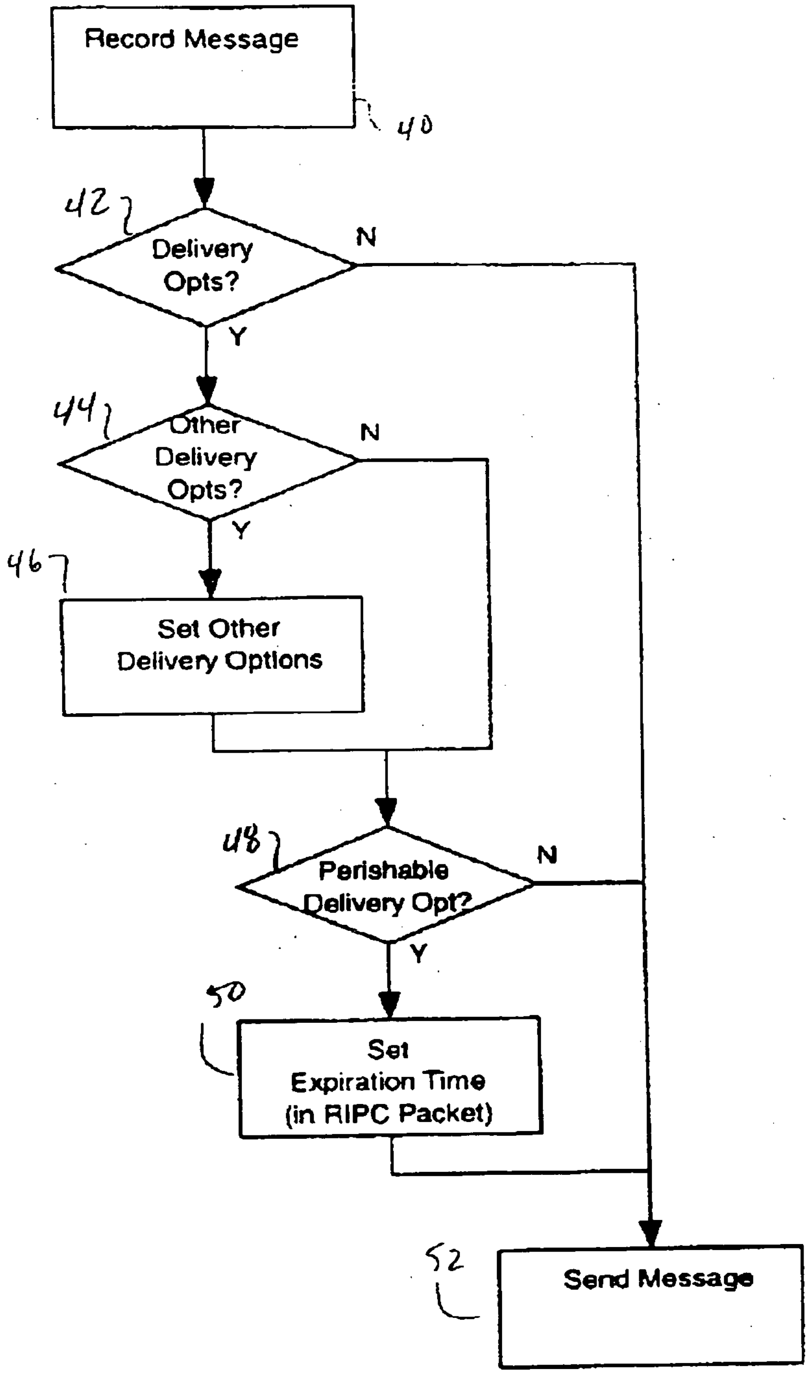
【図５】


Hex
Offset
Fields
← 1 Byte →
0x0000
0x0008
0x0010
0x0018
0x0020
0x0028
0x0030
0x0038
0x0040
envelope (16 Bytes)
sender (26 Bytes)
message_class_id
creation_time
mod_time
pad
saved_postmark
remote_retry
len
length
flags
postmark
expiration_time
34
30
Fig 5

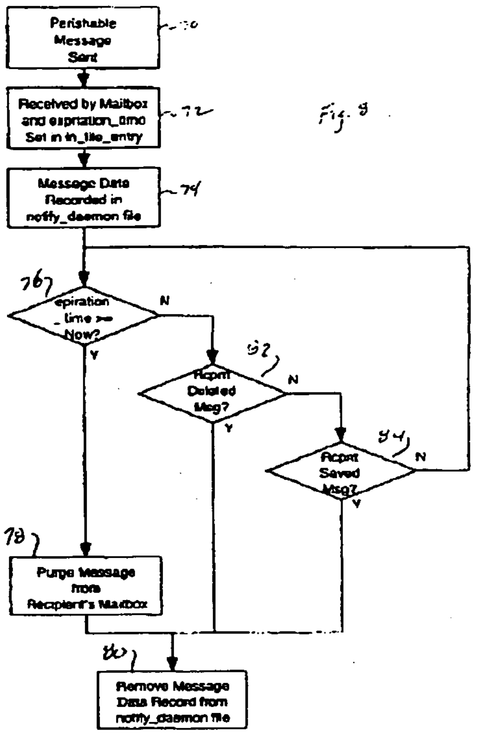
【図６】


Hex
Offset
Fields
← 1 Byte →
0x0000
0x0008
0x0010
0x0018
0x0020
0x0028
0x0030
0x0038
0x0040
0x0048
0x0050
0x0058
last_ref_cnt
creation_time
creator (26 Bytes)
msg_envelope (16 Bytes)
ru (41 Bytes)
deletion_time
flags
expiration_time
36
32
Fig 6

【図７】


Record Message
40
42
Delivery Opts?
N
Y
44
Other Delivery Opts?
N
Y
46
Set Other Delivery Options
48
Perishable Delivery Opt?
N
Y
50
Set Expiration Time (in RIPC Packet)
52
Send Message

【図８】


Perishable Message Sent
~70
Received by Mailbox and expiration_time Set in in_file_entry
~72
Fig. 8
Message Data Recorded in notify_daemon file
~74
76
epiration _time >= Now?
N
Y
92
Rcpnt Deleted Msg?
N
Y
94
Rcpnt Saved Msg?
N
Y
78
Purge Message from Recipient's Mailbox
80
Remove Message Data Record from notify_daemon file

【図９】

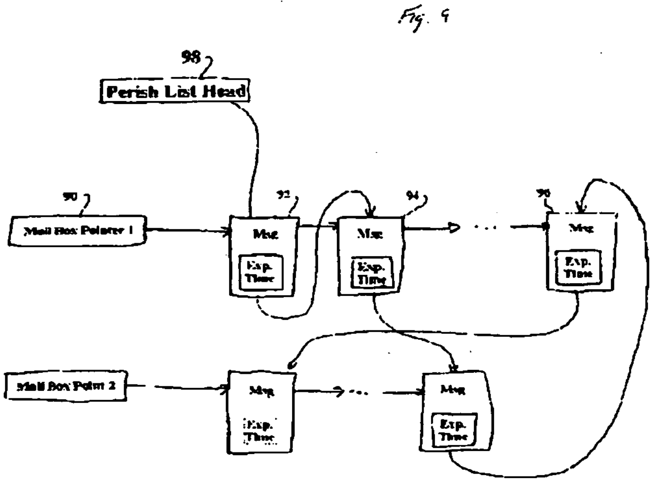
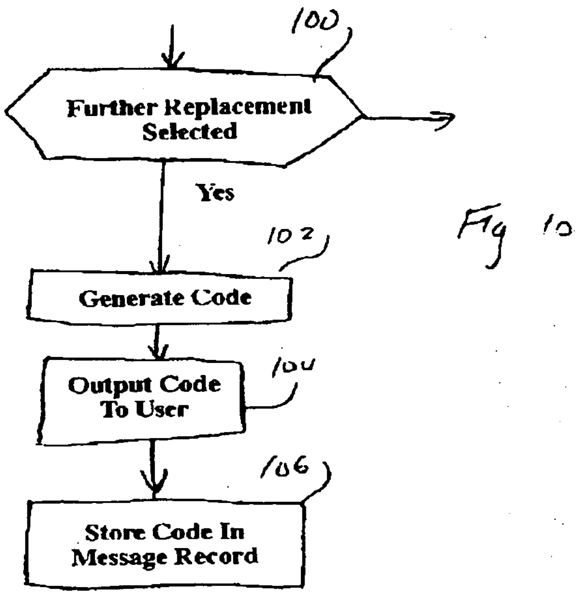
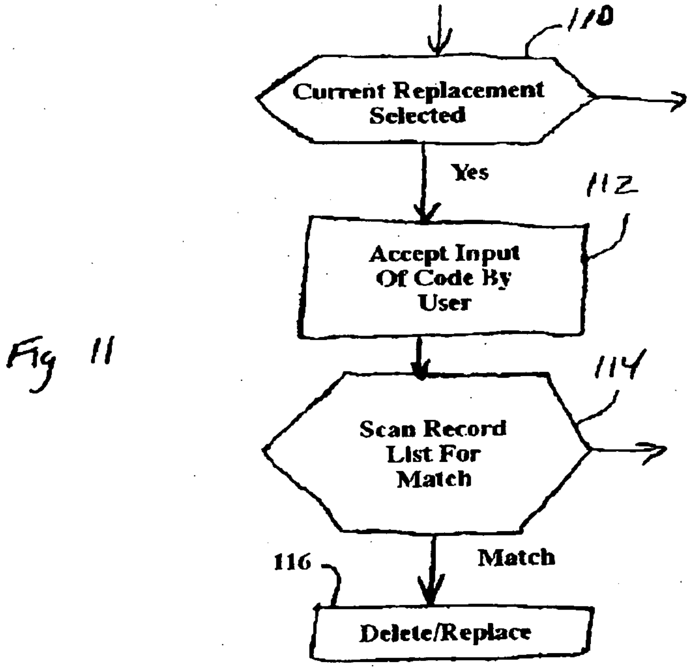


Fig. 9
98
Perish List Head
90
Mail Box Pointer 1
92
Msg
Exp. Time
94
Msg
Exp. Time
96
Msg
Exp. Time
Mail Box Point 2
Msg
Exp. Time
Msg
Exp. Time

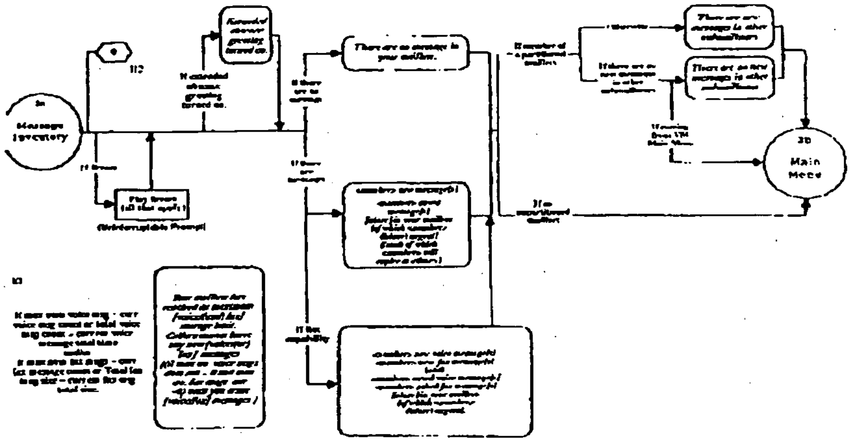
【図１０】


100
Further Replacement Selected
Yes
102
Generate Code
104
Output Code To User
106
Store Code In Message Record
Fig 10

【図１１】


110
Current Replacement Selected
Yes
112
Accept Input Of Code By User
Fig 11
114
Scan Record List For Match
116
Match
Delete/Replace

【図１２】


Message Inventory
Main Menu
There are no messages in your mailbox.
(Uninterruptable Prompt)

【図１３】

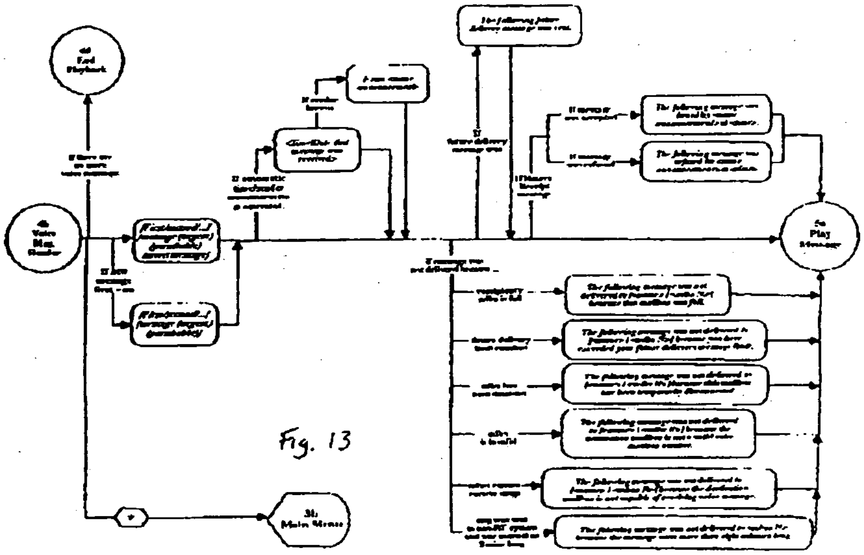

End Playback
Voice Msg. Header
Play Message
Main Menu

Fig. 13

1. Abstract

A system that provides a user interface that allows a user, such as a telephone caller, to leave a message, such as a voice mail message, for a recipient and to specify an expiration date/time for the message. The expiration time for the message can be set as part of the specification of delivery options for the message. A message deletion process of the system reviews the expiration time of the messages stored in the system and deletes or purges those messages that have not been reviewed by the recipient and which are expired. An announcement that one or more messages are going to expire imminently is optionally made to alert the subscriber concerning deletion. The process optionally alerts the sender that the message has been deleted and/or optionally returns the message to the sender. The system also allows the sender to be provided a unique identifier for a replaceable message. The identifier is used to find a previously stored and unreviewed message so that the replaceable message can be replaced with a more current message or deleted. The identifier can be a code produced by the system or input by the sender, or can be a unique pattern, such as a sender's voice print.

2. Representative Drawings

Fig. 8

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